IntechOpen

IntechOpen Series
Education and Human Development, Volume 5

Higher Education

Reflections From the Field - Volume 3

Edited by Lee Waller and Sharon Kay Waller

Higher Education - Reflections From the Field - Volume 3

Edited by Lee Waller and Sharon Kay Waller

Published in London, United Kingdom

Higher Education - Reflections From the Field - Volume 3
http://dx.doi.org/10.5772/intechopen.112127
Edited by Lee Waller and Sharon Kay Waller

Contributors
Ximena Paz Martinez Oportus, Alex W. Slater, Matthew James Phillips, Blanca Klahn, Susana Rodrigues, Ana Catarina Baptista, Heather Leslie, Alejandra Lizardo, Ashley Kovacs, Iswahyudi, Kalyan Kumar Sahoo, Vaibhav Patil, Raja Mannar Badur, Bekele Workie Ayele, Omo Aregbeyen, Emmanuel Nnadozie, Afeikhena Jerome, Kaouther Ardhaoui, Jonathan Michael Blackledge, Kirpa Chandan, Carmel Kealey, Pat Timpson, Brian Murphy, Engkizar, Syafrimen Syafril, Zainal Asril, Zainul Arifin, K. Munawir, James Ma, Hazri Jamil, Khadija Jaffar, Isabel María Gómez-Trigueros, Nehme Azoury, Cynthia Simon Hajj, Mohammad Makram, Parimala Veluvali, Jayesh Surisetti, Baharuddin, Putri Handayani, Kamaluddin Yusra, Alfredo Moscardini, Duk-Hyun Jeong, Tinayeshe Shumba, Tunika Munkuli

First published in London, United Kingdom, 2023 by IntechOpen
IntechOpen is the global imprint of INTECHOPEN LIMITED, registered in England and Wales, registration number: 11086078, 5 Princes Gate Court, London, SW7 2QJ, United Kingdom
Printed in Croatia

British Library Cataloguing-in-Publication Data
A catalogue record for this book is available from the British Library

Additional hard and PDF copies can be obtained from orders@intechopen.com

Higher Education - Reflections From the Field - Volume 3
Edited by Lee Waller and Sharon Kay Waller
p. cm.

This title is part of the Education and Human Development Book Series, Volume 5
Topic: Education
Series Editor: Katherine K.M. Stavropoulos
Topic Editor: Delfín Ortega-Sánchez

Print ISBN 978-0-85014-240-2
Online ISBN 978-0-85014-241-9
eBook (PDF) ISBN 978-0-85014-242-6
ISSN 2755-9513

IntechOpen Book Series

Education and Human Development

Volume 5

Aims and Scope of the Series

Education and Human Development is an interdisciplinary research area that aims to shed light on topics related to both learning and development. This Series is intended for researchers, practitioners, and students who are interested in understanding more about these fields and their applications.

Meet the Series Editor

Katherine Stavropoulos received her BA in Psychology from Trinity College, in Connecticut, USA and her Ph.D. in Experimental Psychology from the University of California, San Diego. She completed her postdoctoral work at the Yale Child Study Center with Dr. James McPartland. Dr. Stavropoulos' doctoral dissertation explored neural correlates of reward anticipation to social versus nonsocial stimuli in children with and without autism spectrum disorders (ASD). She has been a faculty member at the University of California, Riverside in the School of Education since 2016. Her research focuses on translational studies to explore the reward system in ASD, as well as how anxiety contributes to social challenges in ASD. She also investigates how behavioral interventions affect neural activity, behavior, and school performance in children with ASD. She is also involved in the diagnosis of children with ASD and is a licensed clinical psychologist in California. She is the Assistant Director of the SEARCH Center at UCR and is a faculty member in the Graduate Program in Neuroscience.

Meet the Volume Editors

Prof. Lee Waller is a Distinguished Professor of Education at the Baptist University of the Americas, Texas, USA. He previously served as the president of European University College, Dubai, UAE, and as an associate provost at the American University of Ras Al Khaimah (AURAK), UAE. Prof. Waller earned his BS in Education and MS in Mathematics from Stephen F. Austin State University, Texas, USA. He completed a Ph.D. in Higher Education Administration from the University of North Texas, USA. Prof. Waller was awarded the Effective Practice Award for Excellence in the Utilization of Emerging Technology by the Online Learning Consortium and the Excellence in Teaching Award by Sigma Alpha Pi, The National Society of Leadership and Success.

Dr. Sharon Waller is an associate professor at Abu Dhabi University, UAE, where she serves as the head of the Department of Education. She previously served as an assistant professor at the American University of Ras Al Khaimah (AURAK), UAE. Dr. Waller earned a BBA at Texas Woman's University, a MEd from the University of North Texas, and a Ph.D. in Special Education from Texas Woman's University, USA. Dr. Sharon holds a Texas teaching certification in All-level Generic Special Education and is also a certified educational diagnostician.

Contents

Preface

In the academic year 2020–2021, COVID-19 ravaged the world, causing more than six million deaths globally. This highly infectious pandemic devastated higher education and forced almost all institutions to reinvent instructional strategies and delivery methodologies. The pandemic so widely affected higher education institutions that many have come to believe that higher education has been forever transformed in ways that are yet to be fully realized. Without a doubt, digital education became the preferred delivery methodology as students and faculty sought the protections afforded by isolation. Some institutions were prepared to utilize this delivery methodology. Many were not prepared. Regardless, the pandemic forced the issue. Higher education was changed to protect both students and faculty.

The changes brought to the field of higher education have been more substantial than any other changes within the last hundred years. Not since the Spanish flu in the early 1900s has the world faced a similar epidemic. While all students have been affected, first-generation, female, and underrepresented students have borne the bulk of the burden. To better understand the ravages of the pandemic, this book examines four distinct aspects in four sections: "Changing Education", "Education in the Pandemic", "Sustaining University Education", and "Embracing the Future in a Global World". These categories of inquiry are intended to shed light on the impact of the pandemic and the future of higher education post-COVID.

To understand the impact of the COVID pandemic more fully, one must examine higher education both pre and post-pandemic. A good perspective of higher education is fundamental to grasping the many changes brought by the COVID-19 epidemic. An understanding of the past and present more clearly illuminates the future of higher education post-COVID. The university experience for women, students of color, and the disfranchised has been particularly impacted. While many students were forced to drop out in order to financially survive during the pandemic, the real question remains as to the likelihood of their return to pursue their educational dreams. How resilient will these students prove to be? How resilient will higher education prove in recovering those whose dreams were placed on hold?

COVID wrought many changes upon the higher education system. The brick-and-mortar institutions were hit the hardest. Those institutions already deeply involved in the delivery of online learning were often the least impacted. The institution's commitment to online learning proved to be highly correlated to the ability to successfully navigate the changes brought on by the pandemic. Those institutions only lightly engaged in distance education or not engaged in distance education found themselves thrown into a new learning paradigm. Both instruction and assessment proved difficult and involved a substantial learning curve forced upon all institutions whether prepared or not for digital education. Student psychological well-being suffered as students found themselves isolated and separated from their colleagues and faculty. Many barriers and challenges emerged requiring the best practices of higher education institutions. Where deficiencies in social justice and equal treatment already existed, these became much more pronounced as support interventions

were employed. Institutions struggling to address student needs were more likely to serve those deemed most important. Many other students simply fell to the wayside as they navigated financial and technological challenges.

Online and digital learning emerged as the answer to the isolation imposed by the pandemic. As previously mentioned, some institutions were prepared, and others were not. The transition to online learning involved so much more than just carrying face-to-face instruction into a digital environment. Many institutions discovered this truth the hard way as they floundered through the transition process. The virtual environment demanded the reinvention of curriculum and instructional methodologies. Students lacking the required digital resources were often forced to drop out. Many faculty also struggled to master the instructional competencies required in the new learning environment. The engagement of students with other students and of students with faculty replaced the standard classroom environment and proved an important strategy for enhancing learning. The real question remains as to the possibility of returning to the educational environment as it once was. What lessons have been learned? How has education forever changed?

The future of higher education is now in question. What will higher education look like in the post-COVID world? What have teachers learned about teaching during the pandemic? What are the new dynamics of professional development as faculty are prepared for the future? Faculty who lived through the pandemic have gained rich insight into addressing the global disruption of the educational process. While the future of higher education may be in question, the gifts and talents of higher education faculty remain absolute. The creative and innovative will always rise to meet and overcome the barriers and challenges. This creativity and innovativeness must be unleashed in the days ahead to ensure that the generation forced out by the pandemic is regained and allowed to complete their educational dreams. The world can ill afford the loss of this massive number of future employees.

The challenge of restoring the educational system to its previous level of accomplishment rests upon all institutions. Educators must ensure that COVID did not happen to them. Rather they must ensure that COVID happened for them. The creative, the innovative, those with a vision for the future must see beyond the difficulties to use the lessons learned to improve the educational system and to raise higher education to a new level of accomplishment. After all, the world depends on this coming generation of learners.

Special thanks go out to the many, many educators who embraced the challenges brought on by COVID and used them to improve the learning environment.

Lee "Rusty" Waller
Baptist University of the Americas,
San Antonio, Texas, United States of America

Sharon Kay Waller
Abu Dhabi University,
Al Ain, United Arab Emirates

Section 1

Changing Education

Chapter 1

Perspective Chapter: Changing the Educational Metaphors

Alfredo Moscardini

Abstract

Change in society is happening—change in knowledge, change in working practices, availability of employment (robotics and AI) and change in management. How is Higher Education responding to these changes? This chapter takes the view that the metaphors employed by educationalists play an important role. It is suggested that machine-based metaphors emanating from Newtonian thinking are now outdated and need to be replaced with ones based on the systems approach. The chapter identifies some common metaphors used by governments, HE management and HE employees. It then examines the consequences of changing them. The chapter does not promote a specific point of view but is intended to stimulate debate in this important area.

Keywords: metaphor, education, knowledge, system thinking, management of change

1. Introduction

This chapter is not written to promote my personal views of education but to encourage the readers to examine and analyse their own views. It is understood that the word "education" can mean different things to different people but any discussion on education must include one (or several) of the following: what is its aim, what it is doing and how is it achieved—purpose, parts, process.

The way we communicate is dependent on words, yet words can often be the cause of misunderstandings as words in themselves cannot always express the true meaning of an idea or a concept. One way of resolving this difficulty is to use metaphor and simile. A metaphor transfers meaning between contexts. In the expression, "*who holds the levers of power*" we are using the word" lever", which has a precise definition in mechanics, in a different context. The meaning of the metaphor is perfectly understandable, but it does suggest that "power" is a thing like a rock or an object that can be manipulated. The subtleties of all the relationships connected with power are not considered. A simile is different to a metaphor as it commonly uses the words "as" or "like" to make comparisons [1]. According to Bednar and Hineline, metaphors serve four major functions: influencing, perception, expression and learning [2]. They contribute to the formation of ideas and concepts and as a linguistic tool, are a powerful means of conveying, relating, transmitting and elaborating an intended meaning [3]. But a metaphor does not need to be stated with words. For example, the late-night diner scene depicted in Edward Hopper's famous painting *Nighthawks* is often interpreted as a metaphor for the loneliness and alienation of modern city life.

I wish to show in this chapter how all our views on education are shaped by the metaphors we use and use some of the more common metaphors to tease out different perceptions of education. Some of these metaphors are instantly recognizable but many are tacit. They are buried deep in our subconscious and are part of the web of our perceptions. For example, the "power is an object" metaphor is more like to resonate more strongly in a country where power is hierarchical and concentrated at the top than in an equalitarian democratic society. In this way, metaphors can be associated with the Ouroboros. The way we see the world is influenced by the metaphors we use and the metaphors we use are generated by the way we see the world.

Any perception of education is dependent on whether one is considering the societal or personal level. Metaphors can only be useful in the context they are set. In this chapter, we identify some of the common metaphors used in education and the consequences of using them. We will examine two broad classes of metaphor based around the idea of education as a machine and education as a process. The machine metaphor uses nouns such as controller, designer, driver, steersman, traveller, foundations and verbs such as fill, train, oil, polish, switch on, store, draw out, instil and package. The process (or systemic) metaphor employs verbs such as cultivate, plant, prune, tend, develop, root, seed, flowering, flourishing.

2. The machine metaphor

After Newton introduced the idea of gravity, it was found that the associated mathematics could explain many hitherto unrelated phenomena such as motion of the planets, the behaviour of tides and the fall of objects to Earth. This was the beginning of what is termed the scientific paradigm. At the heart of this thinking is the machine metaphor. Newton himself, who was deeply religious, compared the universe to a perfectly made watch where God was the watchmaker. This metaphor that equates efficiency to a well-oiled machine is deep in our modern psyche. One property of a machine is that it needs a designer, controller, driver. In this section, we will consider metaphors involving agents, forces or circumstances that exist exterior (outside of) the entity being discussed and which design, assign purpose to and monitor the behaviour of the entity. There are many metaphors that are used in this manner when discussing education. We will discuss four: "education as a journey", "knowledge as a commodity", "education as control" and "education as a building".

2.1 Education as a journey

One often sees references to an educational journey which begins at kindergarten and ends at university. A journey takes place over space and time. It needs a starting point, a route and a destination. Some routes may be well-trodden routes, but others need to be avoided. For this reason, it is useful to have a map, itinerary or a guide. I regard this metaphor as part of the "machine metaphor" because the journey is decided by outside agents, there is an agreed end point (the goal or purpose of the education) and a decision about the set of preferred steps to take, called the curriculum, which is equivalent to a map. The journey is decided in advance by the people in charge and one either reaches the destination (passes an assessment) or one does not. There is also extra kudos if one finishes quickly. Within certain stages of

the journey, some exploration is permitted but there always is a favoured knowledge which one is supposed to master.

What are the underlying assumptions here? Successful students are those that have attained a predetermined level of knowledge which has been deemed useful to the person or the society. As time passes, better maps are drawn, and new destinations are added to the itineraries so that the process is not entirely static, but the control is always external. The traveller has the freedom to choose a destination or take a different path to the norm, but the choices are predetermined. Korzybski coined the phrase "*The map is not the territory*" [4] as there is a tendency to conflate them. Any map is by its nature a simplification of what it is being represented. It is heavily dependent on context and the knowledge and experience of the user.

What is the final product of an education system—a good citizen? This links to the journey metaphor where the destination is suitability for employment and decided by the state. When neuroscience began as a subject area, the existence of connected neurons in the brain was regarded as a way of learning. Donald Hebb used the metaphor "forming paths in the wilderness". The more people who used a path, the more prominent this path became. Thus, the more certain neurons were connected, the stronger that link would become forming knowledge. This is known as Hebbian learning and is fundamental to machine learning and neural networks [5].

A similar metaphor is that of a ladder. Many people see education as a means of climbing up the social scale. Possession of certain knowledge or attaining certain certificates (such as a degree) represents a rise in social status. One danger here is that of narrowness. A ladder can be adjusted to different terrains and reach different targets but once on the ladder there is only one way up and one way down. The steps on the ladder are fixed. If one rung snaps, then one can be stuck on the ladder. A connected metaphor is that of a Glass Ceiling, which is invisible barrier which cannot be broken.

This metaphor allows for knowledge to develop in a logical, linear way but has difficulties with innovation. De Bono heavily criticises the use of the machine metaphor when discussing thinking. Using this metaphor, he compares thinking to digging a hole. The solutions to problems (commodities) can be found at the bottom of the deepest holes (which are inhabited by "experts"). Many times, new discoveries and innovations have been found lying on the surface away from the hole. De Bono expounds the aleatoric nature of innovation and shows that many discoveries owe a lot to chance. The rejection of the machine metaphor led him to the idea of lateral thinking [6].

At the societal level, one can see sense in the "journey" metaphor. If a community has an agreed, uniform perception of education, then administration is easier. At the personal level, I do not like the metaphor as it depersonalises the individual. Everyone has different talents, different objectives and different ways of learning. I taught for many years on the Open University Mathematics courses. Mathematics has always been regarded as a subject whose mastery had a linear progression. By this is meant that there are definite stages of understanding, and one cannot proceed to the next without mastering what had gone before. This is using the ladder metaphor. The Open University challenged this concept. It offered degree-level mathematics to students who had no previous mathematical knowledge! This was thought to be impossible, and I was originally extremely doubtful as to whether it could succeed. It did succeed, showing that at least in this case, the ladder metaphor was inappropriate.

2.2 Knowledge as a commodity

The most common metaphor for the past 2000 years is that of *knowledge as a commodity.* For example, we talk about intellectual property rights, buying and selling knowledge, storing knowledge, digging up the facts, building a foundation and spreading knowledge. In this view, knowledge is considered a collection of facts, which can be transferred from one person to another. There are many circumstances where previous knowledge is required for new knowledge so, in one sense, this is a useful metaphor as it prevents the reinvention of the wheel but there is a danger of knowledge becoming ossified and its transfer more of a habit than a meaningful objective. Whenever one regards education as the transfer (or transmission) of knowledge, then one is immediately (albeit tacitly) using the commodity metaphor. In a different context, electricity is *transmitted* along copper wires that are protected from external influences by plastic coats. To pursue this analogy, does education need to be encased it in laws to protect it from outside interference.

Transfer means to cross a boundary and thus implies the independent existence of an object. Thus, the commodity metaphor immediately defines an educator and a learner: the equivalent to the seller and the buyer If Commodities are seen as property, then property has value. One can see the rise of Guilds and the secrecy of the Alchemists as consequences of this metaphor.

Commodities are also concrete, quantifiable and measurable. When applied to knowledge, it becomes a collection of facts. But what is a fact? It is difficult to define a fact that is undeniable and true outside of logic and mathematics. According to Hannah Arendt, all factual truth is always contingent. "Facts are beyond agreement and consent, and all talk about them—all exchanges of opinion based on correct information—will contribute nothing to their establishment" [7]. Science draws its strength from the process of forming and testing hypotheses in order to arrive at factual proof. But facts are always empirically based and therefore depend on consensus. Thus, scientific truth claims to be objective but is really just consensus. Its claim to authority is that it is only true till it is falsified.

After 364 pages of complicated mathematics, Bertrand Russell and Arthur North Whitehead logically proved in their masterpiece "Principia Mathematica" that one plus one equalled two! [8]. They then developed the rest of mathematics which suggests that mathematics is in effect a large tautology, an ouroboros, where the theory explains facts that have been produced by the theory. It can be accepted that such "facts" exist in mathematics but in life it is more difficult to define a fact. In my lifetime, dinosaurs have been cold-/hot-blooded, fast/slow moving, hairy/smooth skinned. It is commonly believed that Henry VIII had six wives and that William was crowned the first Norman king of England in 1066. These can be classed as historical facts but, in many cases, history is written by the winner and there is always at least a smidgeon of doubt. Beliefs are different to facts. The commodity metaphor can lead to the productions of savants, that is people with detailed knowledge of facts but limited in their understanding of their significance. Other important questions are who decides which facts should be transferred and who they are transferred to.

Another attribute of a commodity is that it is quantifiable. It can be valued, measured and assessed. As humankind has delved more deeply into the nature of things, it has become increasingly difficult to measure accurately. This is most apparent at subatomic scales. It is now commonly believed that all measurements depend on context. A measurement is as much a function of the measurer as of the object being measured. When dealing with living beings, this measurement

problem is even more difficult as the object under investigation is not static—it is growing, developing, and remembering. In "education as a commodity", a common measurement is achieved by assessment. This then poses many problems. Is the measurement objective, that is independent of the assessor? What is the purpose of the assessment?—is it to test the efficacy of the system, the efficiency of the testers or the excellence of the learner? These are questions that must be addressed by educators and my thesis is that they are directly related to the metaphor that is being used.

A commonly used visual commodity metaphor is represented in a figure where the brain is a receptacle into which knowledge is being poured. There are many implications that can be drown from this. One is that learning is passive, and the brain is just filled with "knowledge". Another is that this "knowledge" is predetermined, agreed and administered by some third party. Who is the pourer, who chose the bottle, what does it contain? A third implication is that it is a finite process. Once the brain is full, then it can be closed, and the education has attained its purpose.

2.3 Education as control

In 1908, a famous chess match took place at the house of Maxim Gorki on the Island of Capri between Vladimir Lenin and Aleksandr Bogdanov. Both were active Marxists who had actively participated in the Russian Revolution. The chess match was the pretext for a discussion about the nature of the new Russian state. Lenin believed he could use the "education as a control" metaphor to impose compulsory and binding Marxist knowledge on the population. This meant that the content and pedagogy of Russian education should be legally enshrined to protect it from "subversive" theories. Thus, the state shaped its populace. Bogdanov disagreed and thought that, given the right environment, Marxist ideas would flourish through cooperation and agreement, that is the populace would shape the state. The decision was between a bottom-up or top-down approach to education. Lenin's top-down solution prevailed but then how could this be accomplished. This debate then moved to the effectiveness of central control

Most people would associate effective control with central control, but is this always true? There are many examples, especially in nature, where it is definitely not the case. For example, there is a species of leaf cutting ants called Octospinosis that forms colonies of around 50,000 individuals. They search out a certain leaf and cut it into fragments which they cultivate in a garden to grow a certain fungus which is their diet. They also develop antibiotics that protect the leaves from other fungi. They have a training system (a prototype apprentice scheme). They dig trenches around their nest that controls drainage and aeriates the soil and employ an effective waste management system. Every colony is founded by a queen but she merely breeds the ants. She is not a controller [9]. There are many interesting questions here concerning how this system survives, but it has worked well for millions of years without central control. There are many other examples in nature where the control metaphor is not appropriate. In fact, one can say that in nature, central control is not the norm.

It is not suggested that a human society should or could be run as an ant colony but it suggested that we can learn from nature. One can think of business organisations as lying on a continuum, which ranges from highly controlled (probably hierarchical) to self-organising where there is no controller. As an example of the latter, in 1998 Oticon was the third largest hearing aid company in the world with 10% of the market. The world market was stagnant, and the company was running at a deficit when they appointed Lars Kolind as the new CEO. Within a few years, Oticon became

the largest hearing aid manufacturer in the world. Ten years of stagnating sales prior to 1992 were turned into 14% growth in 1992 and 20% in 1993. He introduced revolutionary organisational structure that did not involve central control and for this reason was nicknamed the "Spaghetti Organisation" [10]. Development time for new products was halved and twice as many new products were put on the market. Some of the modernisations were as follows:

- all paperwork arriving at the company was photocopied and then shredded so it could not be stored;
- all work was in teams;
- employees had their own portable desk with a computer, and these could be moved together to form a group or a team
- when faced with problems, they were encouraged to "think the unthinkable" [11].

The "*education as control*" metaphor is still strong today. Control is explicitly linked to purpose. If the pedagogical purpose of a government is to ensure that all the population have a certain standard of education, then using this metaphor is an efficient way of achieving that goal. At the chess match, Lenin won the argument, Bogdanov was banished for 20 years and the soviet system was established. At the state level, many would argue that the metaphor was a valid one and the soviet education system worked. The Soviet people became well educated (in the "*knowledge as a commodity*" sense—they all had predetermined knowledge) and Russian scientists were well respected. However, at the personal level, the central control prevented people from taking decisions, innovative thinking was discouraged and individual freedoms were supressed.

State purveyors of education at all countries are trained to deliver what is regarded as a standard education. If everyone in a population is thinking differently, then there is always a fear of anarchy and civil unrest. The present school education system in England uses this metaphor. There is a board that sets the syllabus in every age group, in every subject. This is taught in every English school. There is no room for deviance. Even creativity is covered. In administration, it is an easy system to maintain, and it has an equalitarian aspect in that everyone is treated the same. The obvious disadvantages are that the "educators" decide what the commodity is and the students are simply recipients of the thing called knowledge. There is no recognition of diversity, development and growth. Is the purpose of education to control?

This metaphor also influences assessment. Standardised tests are devised to monitor the prescribed knowledge that has been delivered. I once had an acquaintance who proudly held a certificate proclaiming that he was sane. To me his need for this certificate indicated that he was not!

2.4 Education as a building

Another common metaphor talks about laying the foundations of knowledge and building educational edifices. Words such as bricks, pillars, windows and access to light are common. **Figure 1** shows a diagrammatic representation of an educational system, which uses this metaphor. The diagram is intended to show a

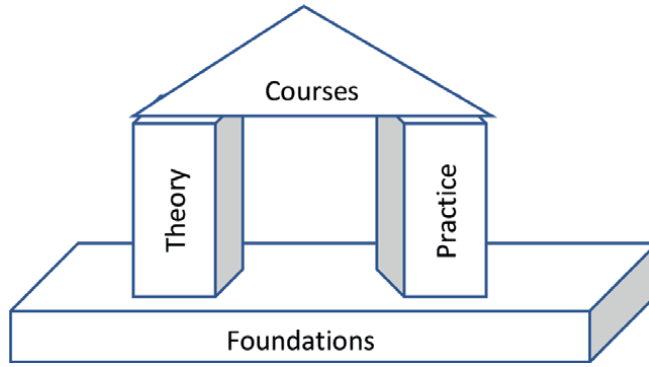

Figure 1.
Education as a building. Source: Author.

well-constructed course, built on firm foundations, with defined pillars of wisdom supporting the predefined knowledge. This is a first sight an appealing metaphor. Such a system could be well defined and work well in a particular context, but it suffers from all the faults of a machine metaphor. It is also inflexible and rigid. Physically, an earthquake could easily topple it and, when applied to education, would it survive sudden changes in policy.

3. The process metaphor

The process metaphor is associated with system thinking which is centred around the systemic ideas of process, relationships, recursion, emergence and holistic thinking.

"No man is an island" is a celebrated line taken from a sermon by John Donne, the Dean of St. Paul's in 1640. It uses a geographical metaphor to express the fact that people cannot exist independently from others—from humanity. It expresses very eloquently a basic belief of system thinkers—that the relationships between entities are more important than the entities themselves. In fact, many entities are only defined by their relationships.

Another fundamental systemic belief is the idea of recursion—that every system is embedded in other systems. This implies that everything exists in three forms: what it currently is, a collection of parts and a part of a greater whole. These three forms are termed levels of recursion.

Scientific thinking is reductionist. It divides the whole into parts, improves each individual part and then reassembles the parts into a new whole. For the whole to work effectively, each part must fit with/connect to other parts and work harmoniously together. In this sense, there is a relationship between the parts, but the difference is that in system thinking, the parts cannot exist independently without that relationship. The parts are interdependent. In the mechanical case, when one gathers things together and the whole equals the sum of the parts but in the systems case, new properties may be present in the whole that did not exist in the parts. The whole is not just the sum of its parts. This property is known as emergence and the emphasis on the whole is known as holistic thinking. This is a very different way of thinking compared to the scientific paradigm [12].

To illustrate the difference between system and scientific thinking, let us use system thinking to deconstruct the question "*What is Education?*"

- The second word "*is*" implies existence but at what level of recursion? Are we discussing its parts—curricula, teaching institutions, teaching or are we examining education as part of a larger process that has value either at the personal or at the societal level. As a system thinker, I do not accept that existence is an independent property. Everything consists of parts and is itself part of something; that is, it exists in to different guises—it is Janus faced.

- The fact that we use the third word "*Education*" implies that we all know and agree what education is (which makes the sentence tautological). But, as will be made clear, it is important to identify at which level of recursion "education" is being discussed.

- The first word "*What*" implies that whatever education is, it can be classified and measured. Plato posed the question of how we can know something that we do not already know [13]. Kant classified the world into the phenomenal and the noumenal. The phenomenal described attributes, whereas the noumenal captured the essence of the object and stripped of its attributes—the ding-un-sich—the thing-in-itself. He concluded that it was impossible to capture the noumenal so that all our studies were phenomenal and therefore open to debate and communication [14].

Several metaphors will now be discussed which are tacitly understood to have a strong connection to system thinking.

3.1 Education as a process

One talks of the educational process, of one's knowledge blossoming, of discovering new paths and new destinations, of creating new areas of knowledge, of growth and development. When education is seen as a process, it has no beginning or end. A process simply exists. Knowledge is whatever is needed for sustainability. Decisions are not decided by external forces but are generated from within. This is an entirely different to the "education as a journey or ladder" metaphor. It does not state starting points or destinations. A process is something that enfolds. It continues. Chance is always present. At the personal level, this metaphor allows individuality. Each person is sharing in a process but in an individual way. It does not function so well at the state level where the state is demanding certain knowledge. Again, one can see a connection with the metaphor of an ouroboros. Education is constantly eating its own tail. New ideas are old ideas repackaged for a new market; lessons are not learned; the past is forgotten, and the future is always new and exciting.

This metaphor uses the word "knowledge" as a verb rather than a noun. "Knowledge" is an action—doing or thinking or participating. This encourages cooperation rather than competition or hoarding. It has an emergent attribute which solves Plato's dilemma and explains innovation. Any knowledge is part of a higher knowledge (recursion). In this sense, knowledge develops. Knowledge is contextual. There is no true or perfect knowledge, just appropriate knowledge for the environment, which is being examined.

3.2 Education as a self-organising system

We have seen that lack of external or central control does not necessarily imply disorder or chaos. A system can be self-regulatory; that is, it has developed (not

been designed) to monitor itself and adjust its behaviour to enable it to survive. For Argyris and Schön, learning involves the detection and correction of error [15]. When one's results do not achieve the objective, the first reaction is to change the strategy. The new results are evaluated, and the strategy is modified. There exists a simple negative or self-correcting feedback loop, which is often described as "*single loop learning*". This can be an effective way of proceeding and is the basis of a homeostat such as the thermostat in your house but what is not questioned are the underlying assumptions—governing variables. If one applies a similar feedback loop to these variables, then we have what Argyris and Schon call "*double loop learning*" [15]. This is shown in **Figure 2**. Changing the governing variables will affect objectives and strategy. This is how Argyris and Schön described the process in the context of organisational learning:

> *When the error detected and corrected permits the organization to carry on its present policies or achieve its presents objectives, then that error-and-correction process is single-loop learning. Single-loop learning is like a thermostat that learns when it is too hot or too cold and turns the heat on or off. The thermostat can perform this task because it can receive information (the temperature of the room) and take corrective action. Double-loop learning occurs when error is detected and corrected in ways that involve the modification of an organization's underlying norms, policies and objectives [14].*

Usher and Bryant see similarities with this work and that of Aristotle when he was discussing practical and technical education [16]. Technical education is similar to single-loop learning insofar as if there are certain rules, routines and processes that are predetermined and must be followed. Practical learning relies more on reflecting on what one is doing, and this involves the double loop where one is always questioning and changing objectives. It also invokes the learning stages proposed by Gregory Bateson [17]. Single-loop learning equates with learning stage one which he terms machine learning. Double-loop learning equates with learning stage 2 which he terms "learning to learn" referring back to the "education as control" metaphor and for the debate between Lenin and Bogdanov, one could say that Lenin was advocating single-loop learning, whereas Bogdanov, who is regarded as the first cybernetician, was advocating double-loop learning.

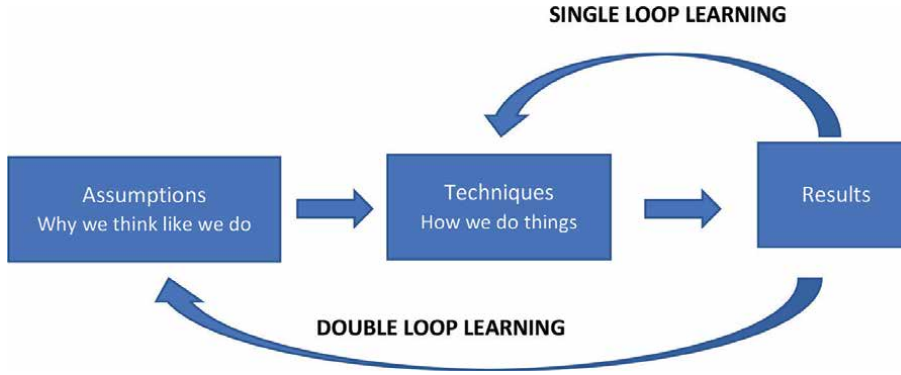

Figure 2.
Double-loop learning.

All systems are defined by their environment. The boundaries that are defined create a space without and a space within. Over time, the system itself will develop a set of values and principles which will establish a culture—an organisational structure. This structure is specific to the system and is controlled by the system. When the environment changes (which will be often), the system should, through its communication channels, recognise these changes. It can then evaluate them and decide how or whether to use them in its organisational structure. The important fact is that it is the system that affects the internal change not the environment. The system is in charge of its own destiny. Control is from within rather than imposed. It is structurally open, but organisational closured. Such a system is a special case of a self-regulatory system and is known as a Complex Adaptive System (CAS) [18].

There are many misapprehensions connected with self-organisation. One interpretation is that an effective CAS relies on motivated and committed individuals who will commit their time to make it work, thus making it a costly venture. But it is the opposite that is true. There will be transitional costs in setting up the educational system as a CAS but once running, it will control itself and therefore save on costs. However, it is recognised that human societies are extremely complex and there will be difficulties, as seen by social media platforms, in self-regulation and misinformation.

3.3 Education as a garden

This is the systemic equivalent of the "education as a building" metaphor. The difference is between a gardener and a builder. A good gardener tends to the garden. He allows it to grow and flourish. It is true that the English Garden of the eighteenth century was planned and controlled. I am referring to a wild garden that is protected against disease and storms but allowed to grow freely. One can see the attraction of this metaphor in the development of personal education and indeed this was the theory behind the international movement for progressive education, which began before the turn of the century. There were reformers in the United States, like the educational philosopher, John Dewey. In Germany, Paul and Edith Cassirer-Geheeb founded the Odenwaldschulei [19]. In Italy, Dr. Maria Montessori developed a method of teaching young children through structured lessons using attractive equipment that she herself designed. Montessori showed that pupils were quite capable of learning on their own with the help of a teacher as a guide or mentor. They responded well to the opportunity to choose what to study and the manner in which they do it. This is not popular among educators as it is much more difficult to assess and is much more time consuming than traditional methods [20].

The modern education system using the machine metaphor decides on the content of the knowledge, the method which this will be imparted and it can easily produce knowledgeable robots with no adaptability to different circumstances. Maybe, this new metaphor needs to be considered.

3.4 Education as evolution

Darwin talked about the struggle for existence, but in 1865 Herbert Spencer coined the phrase "survival of the fittest" to describe the mechanism in Darwin's evolutionary theory [21]. This is unfortunate as evolution has become associated with competition but in many cases, species survive through cooperation. Recent research into forests have revealed that trees form communities through their roots. Messages

are transferred and older trees look after younger trees. Forests that are replanted with only one species are not as active as those with different species. There is clear evidence that trees cooperate [22]. The researcher Lin Ostrom has recently received a Nobel prize in Economics for showing the cooperation is a better strategy for companies and businesses than competition [23].

Applying these ideas to Education will involve the concept of team learning. Some benefits of team learning are self-awareness, respect for others, the capacity to plan, negotiate, compromise and consider, to take orders and follow them, and to make suggestions and follow those too. By doing all this, invaluable leadership skills can develop.

Encouraging students to work together can allow "emergence", that is, results that would not be achieved individually and cannot be predicted. This is a disadvantage when devising an assessment procedure. It can be difficult to assess the individual contributions to a group. One advantage of standard examinations is that they are marked against an agreed answer. It is time consuming to assess a piece of work that was not predicted. Current education practice, even when using the mechanical metaphor, is beginning to incorporate team learning but the assessment process is still very much examination centred.

3.5 Education as communication

We have discussed the transmission metaphor of "*knowledge as a commodity*" but how else can knowledge be disseminated. Another metaphor uses the concept of communication—using the unique features of the human language. In this regard, there are two words which I would like to deconstruct—discussion and dialogue.

The etymology of the word "discuss" is from the past tense of the Latin verb "Concutere" meaning to violently shake or dash together. Words with similar roots are percussion and concussion—all with the idea of things bumping into each other. This leads to metaphors such as "standing ones ground", winning the argument" and "taking a position". In contrast, the word "dialogue" comes from the words "dia" and "logos", which implies from or through the word. There is no implication of competing or winning. This is the basis of David Bohm's work on Dialogue which is a process for exchanging views and thereby educating ourselves [24]. Bohm's work is similar to the work of the Russian scholar Mikhail Bahktin who Kim calls "the philosopher of human communication" [25]. He argues that "*Bakhtin's theories of dialogue and literary representation are potentially applicable to virtually all academic disciplines in the human sciences*" [25]. According to White, Bakhtin's dialogism represents a methodological turn towards "*the messy reality of communication, in all its many language forms*" [26]. Kim also states that "*culture can be generally transmitted through communication or reciprocal interaction such as a dialogue*" [23]. Baxter states "*a dialogic perspective argues that difference (of all kinds) is basic to the human experience*" [27]. These references imply that any communication is heavily dependent on context. For a communication to be effective, the communicator must be aware of the background and culture of the person that is being addressed. There must be an awareness of any hidden or ambiguous meanings. For instance, the world "control" has a very different meaning in former Soviet countries to the softer meaning (akin to organisation) that is adopted by system thinkers. Communication need not just be by words. Art has been as a communicating medium. Picasso's Guernica is now universally accepted as a protest against totalitarianism and currently, Wei Wei's art is seen as sending messages to the current Chinese government.

Adopting this metaphor of "education as communication" could involve a greater emphasis on what are termed "soft skills" of which one is the ability to express oneself. At universities in the Middle Ages, as part of their education, students were encouraged and taught "in utramque partem", which means to argue for both sides of a proposition. This recognises the arbitrariness of facts as mentioned earlier and reminds one of a forgotten part of education—rhetoric. Rhetoric is the study of how to communicate effectively in speech or writing. This could be made an important part of any educational process and would aid in the understanding of cross-cultural differences.

Applying these ideas to Education will involve the concept of team learning There are many benefits of team learning such as a greater awareness of oneself, an understanding and respect of the views of others that will lead to negotiation and compromise, self-reflection and an appreciation of the qualities of leadership. Encouraging students to work together can allow "emergence", that is results that would not be achieved individually and cannot be predicted. This idea is predicated on "holistic thinking" and "recursion" that are key concepts of system thinking. For a culture that is dominated by the machine metaphor, the behaviour of the whole is always presumed to be the sum of the behaviours of the individual parts but the system metaphor places the whole and the parts on different levels of recursion. Thus, the "team mind" is not simply an accumulation of the minds of the team members. It is certainly the case that the "team mind" can come up with beliefs which can be true or false. The ouroboros appears again—the experience and interaction of working in a team shapes the views of the individual members but then these views shape the view of the team.

Working as a team can cause difficulties when devising an assessment procedure. It can be difficult to assess the individual contributions to a group. One advantage of standard examinations is that they are marked against an agreed answer. It is time consuming to assess a piece of work that was not predicted. Current education practice, even when using the mechanical metaphor, is beginning to incorporate team learning but the assessment process is still very much examination centred. The machine metaphor rests on the assumption that everyone should share the same beliefs else disorder would result. This implies an arbitrator of what is acceptable and what is not (Newton's watchmaker). But this neglects the community. People form communities where, whatever their beliefs, they share values of behaviour. So, they are the arbiters. This is surely the basis for a multi-cultural society that allows different beliefs to coexist.

4. Is a change of metaphor needed?

It is undisputed that to prosper any society needs to produce new generations of workers whose responsibilities are to maintain values and economic standards. This was the Lenin-Bogdanov debate discussed earlier. How this is achieved depends on the goal. If the goal of the education system is to ensure that its population has a predetermined set of skills, then organising a centralised, prescriptive system with regular standardised testing and maintenance is an efficient and cheap option and this will utilise some form of the mechanical metaphor. If the goal of education is to develop in innate, latent talents in individuals then a much more flexible approach (using the system metaphor) are needed. This will be more expensive to run and at first sight more complex unless the system is made self-regulatory. Individuals who have self-knowledge and belief and have studied areas that they are interested in

in their own time and manner will then be able to contribute to the society that has provided the educational environment.

The school educational journey is England is determined centrally. The national curriculum is a set of subjects and standards used by primary and secondary schools so children learn the same things. It covers what subjects are taught and the standards children should reach in each subject. Other types of school like academies and private schools do not have to follow the national curriculum but must teach a broad and balanced curriculum including English, maths and science. The national curriculum is organised into blocks of years called "key stages" (KS) that cover from preschool to 18-year-olds over 13 years. At the end of each key stage, the child's performance is formally assessed. The key stages are Early years (year 1–2), KS1 (yrs 3–6), KS2 (yrs 7–9)), KS3 (yrs 10–11) KS4 (yrs 12–13). Academies do not have to follow the National Curriculum, so they have much more flexibility about what they choose to cover. However, academies do have to teach a "broad and balanced curriculum", including English, mathematics, science and religious education. Ofsted (the UK regularity authority) will inspect them just as it would a maintained school [28].

The metaphors used by the present school curriculum tend to preserve a certain view of the UK, which is now being challenged on grounds of diversity, colour and colonialisation. For example, many books contain no persons of colour, and the prevailing view is that, in the main, the British Empire was a force for good. It is culturally biased towards a white, male Britishness which may no longer exist. In one sense, this does what all centrally controlled systems do—preserve the status quo and cohesion but it limits the provision of new views. Although within this national system, certain attempts are made to allow minor digressions, the whole system is designed to turnout the maximum number of people with basic knowledge in the cheapest way.

One can concede that the mechanical metaphor will generate an easier system. Events may have many causes—not just a single one and everything is interconnected. A more varied system will demand teachers with different skill sets, which may not be available. There is a demand for certificates and any system that does not generate them will not be favoured by the populace. Also, the government has to account for money spent and this is a way of showing value for money. These are serious considerations, but they deflect one's attention from what it is that is happening. School education must be focussed precisely on those areas that are the least valued today in society—in the systematic promotion of diversity and creativity.

We can apply the same logic to the Higher Education Sector. What is the purpose of a university? [29]. It seems that today it is to award degrees which then can be used to gain employment—a perfect example of education as a commodity. A problem is that in this fast-moving global world, many of the courses are out of date and the skills of are graduate do not match the desires of the employers—the so called "skills gap". Using the machine metaphor, a centralised system can never bridge this gap as the new skills are unknown at the time of the determining the curriculum.

Many new skills are emergent and can only be achieved when using the system metaphor. This has implications for change. Systems are constructed to coexist with their environment and tend to resist change. Thus, when contemplating changes in the educational practices, one should examine the metaphor that is being used. Sudden change (shocks) or constant change in society can cause tensions, but most people accept change as part of life and are not resistant to it. The mistake is to try and change people rather than the metaphor. A complex adaptive education system will acknowledge societal changes and will itself change its organisational structure. When this changes, the behaviour of the people in it will change. What is needed is a

new metaphor that generates momentum in a new direction. Both scenarios recognise that the educational system cannot remain static and must change. The question is who or what makes the changes.

Is there a need for assessment? Although project work is becoming more popular, the high majority of university assessment is by examination. This is a product of the machine metaphor in that does the machine is doing what it is designed to do. If university education is designed to reproduce the existing knowledge, then examinations are ideal. Even when examination questions ask the student for his own opinions, these opinions are assessed against the perceived wisdom. In a stable, non-changing world, this assessment procedure worked well but is it applicable to today?

It is one thing to make passionate pleas for change backed up by persuasive reasoning. It is more difficult to detail how the changes can be implemented. There are clues from the past. Piaget's theory was that there are levels of understanding and that people will not learn unless they are mentally at the stage to understand what is being offered. If someone does not understand a concept, it does not imply stupidity but maybe that the learner is not yet ready for that learning. People must understand WHY they need to know before they learn to know [30, 31].

There a have been several attempts by schools to change the metaphor. A.S. Neill, the founder of Sommerhill, set out to make a school that would fit the child rather than forcing children to do what the parents and education thought best for them. He was rejecting the machine metaphor and edging towards the gardening metaphor.

> *"This expectation that everybody will achieve academically is a curse to many young people. "Parents should try not to have the expectations of what or who their children will become. You cannot decide whether they will be a road sweeper, a great surgeon or an opera star. Children need to know that their parents are on their side, acting as their champions" [32].*

The aim of life, according to Neill, was "to find happiness, which means to find interest". Likewise, the purpose of Neill's education was to be happy and interested in life and children needed freedom to find their interests which he felt came organically and spontaneously as a prerequisite for learning. Neill considered happiness an innate characteristic that deteriorated if children were denied personal freedom. Such unhappiness led to repressed and psychologically disordered adults. Neill believed that the best thing teachers could do was to leave children alone to develop naturally. Sommerhill was heavily criticised mainly for its attitudes to sex and freedom but it still exists today after 150 years. I am not arguing for every school to be like Sommerhill but am merely pointing out that there are different ways of organising schools using different metaphors.

5. Conclusion

Ever since the first recorded academy was established by Plato in Athens in 387 BC, the exact nature and function of education has been discussed. The purpose of Plato's academy was to produce an "educated man"—a citizen of Athens. My view, in this chapter, is to suggest that the metaphors in use have a major influence on how education is perceived. Underlying Plato's Academy was a biological metaphor in the sense that it used a combination of the following:

"Savoir d'etre"—**WHAT** exists—understanding and meaning (brain);

"Savoir faire"—**HOW** to do it—vocational training (hands);
"Savoir vivre"—**WHY** we do it—recognising one's place in Society (heart).

The balance between these three roles was thought to give birth to Wisdom. The curriculum was divided into the "trivium" consisting of Grammar, Logic and Rhetoric (teaching how to express oneself and one's ideas) and the Quadrium consisting of Arithmetic (for Finance), Geometry (Geography), Astronomy (knowing one's place in the Universe) and Music (achieving inner harmony).

This chapter has classified some common metaphors under the broad headings of mechanical and process. The mechanical metaphors have their origins in the scientific paradigm that has been prevalent for the past 300 years. It is particularly prominent in STEM subjects. Much of Science builds on what has gone before and therefore the metaphor of passing "knowledge as a commodity" to the next generation is a useful one. It prevents reinventing the wheel and ensures that knowledge is not lost. The metaphor of "education as a journey" is also in evidence as one talks of advancement of knowledge. This places knowledge on a linear progression where some facts are regarded as better than others. But these comparisons are often on a one-dimensional scale and ignore other considerations. Are mobile phones an advance on a telephone? It depends on the criteria used. The scientific paradigm is currently being challenged by the system paradigm, which forms the basis for what I term "process metaphors". Here, the emphasis is on growth and development. Relationships are important and communication plays a larger role. It concentrates on "learning to learn" rather than an accumulation of facts.

Society needs both academics and practitioners. Most higher education institutions are judged on their research and publication records (such as the Research Excellence Framework). A practitioner draws from a different well called experience and involves a different form of education, which could be termed vocational or training. It uses different metaphors such as action learning and learning by doing. Initiatives such as the Teaching Excellence Framework and Graduate Level Apprenticeships are being introduced to remedy this. A very recent development is that of pracademics who work in both fields. By doing so, they are able to gather and leverage knowledge and experience from both domains.

The hope is that the readers of this chapter will now examine the metaphors, tacit or explicit, which colour their perceptions of education. I leave you with a final metaphor by Plutarch (45 AD).

The mind is not a vessel to be filled but a fire to be kindled.

Author details

Alfredo Moscardini
University of Northumbria, Newcastle, UK

*Address all correspondence to: alfredo.moscardini@northumbria.ac.uk

References

[1] https://www.masterclass.com/articles/metaphor-similie-and-analogy-differences-and-similarities

[2] Bednar DA, Hineline J. The Management of Meaning through Metaphors. New York: Academy of Management; 1982

[3] Lakoff G, Johnson M. Metaphors we Live by. Chicago: University of Chicago Press; 1981

[4] Korzybski A. Science and Sanity. An Introduction to Non-Aristotelian Systems and General Semantics. International Non-Aristotelian Library Pub. Co.: The Library Thing; 1933. pp. 747-761

[5] Hebb DO. The Organization of Behavior: A Neuropsychological Theory. New York: Wiley and Sons; 1949. ISBN: 9780471367277

[6] De Bono E. Lateral Thinking. A Textbook of Creativity. Penguin Life; 1970

[7] Nelson JS. Politics and truth: Arendt's problematic. American Journal of Political Science. 1978;**22**(2):270-301 JSTOR

[8] Whitehead AN, Russell B. Principia Mathematica. Cambridge, UK: C.U.P.; 1963. p. 364

[9] https://twycrosszoo.org/animals/leaf-cutter-ant/

[10] Peters T. Thriving on Chaos. Harper Perennial; 1987

[11] Kolind L. Think the unthinkable. In: Morsing M, Eiberg K, editors. Managing the Unmanageable for a Decade. Hellerup: Oticon; 1990

[12] Moscardini AO, Strachan R, Vlasova T, Pavlenko I. A systems strategy for higher education. Performance Improvement. 2021;**60**(2):11-14. DOI: 10.1002/pfi

[13] Ackrill JL. Anamnēsis in the Phaedo. In: Lee EN, Mourelatos APD, editors. Exegesis and Argument: Studies in Greek Philosophy Presented to Gregory Vlastos. Assen: Phronesis; 1973. pp. 177-195. On the theory of recollection in Plato's Phaedo(73c-75)

[14] Hanna R. Completing the Picture of Kant's Metaphysics of Judgment. Stanford Encyclopedia of Philosophy, Stanford University; 2009

[15] Argyris C, Schön DA. Organizational Learning II: Theory, Method and Practice. Boston, MA: Addison-Wesley; 1996

[16] Usher R, Bryant I. Adult Education as Theory, Practice and Research: The Captive Triangle. Routledge; 2014. DOI: 10.4324/9780203802656

[17] Kaiser A. Learning from the future meets Bateson's levels of learning. The Learning Organization. 2018;**25**(4):239-240. ISSN: 0969-6474

[18] Holland JH. Studying Complex Adaptive Systems. Journal of Systems Science and Complexity. 2006;**19**(1): 1-8. DOI: 10.1007/s11424-006-0001z. hdl:2027.42/41486/41486

[19] Näf M, Geheeb-Cassirer E. Founder of the Odenwald School and the Ecole d'Humanité. Weinheim: German, international and Swiss reform pedagogy 1910-1961; 2006 ISBN 3-407-32071-X

[20] Mavric, M. The Montessori approach as a model of personalized Instruction Journal of Montessori Research. 2020;**6**(2):13-25

[21] https://www.azquotes.com/author/13942-Herbert_Spencer/tag/survival

[22] Wohlleben P. The Hidden Life of Trees. Vancouver: Greystone Books; 2015

[23] Ostrom E. Governing the Commons: The Evolution of Institutions for Collective Action. Cambridge, UK: Cambridge University Press; 1990. pp. 90-102. ISBN: 978-0-521-40599-7

[24] Bohm D. On dialogue. New York: Routledge; 1996

[25] Kim G. Mikhail Bakhtin: The philosopher of human communication. The University of Western Ontario Journal of Anthropology. 2011;**12**(1): 53-62. DOI: 10.1017/CBO9781139173865

[26] White EJ. In: Ortony A, editor. Bakhtinian Dialogism: A Philosophical and Methodological Route to Dialogue and Difference? 2nd ed. Cambridge, UK: Cambridge University Press; 1993

[27] Baxter L. Communication as...:Perspectives on Theory. Thousand Oaks, CA: SAGE Publishing, Inc; 2006. p. 102

[28] https://www.gov.uk/government/publications/national-curriculum-in-england-design-and-technology-programmes-of-study

[29] Moscardini AO, Strachan R, Vlasova T. The role of universities in modern society. Studies in Higher Education. 2020;**47**(4):812-830. DOI: 10.1080/03075079.2020.1807493

[30] Piaget J. The child's Conception of the World. London: Routledge; 1929

[31] Piaget J. The Psychology of Intelligence. London, UK: Routledge; 1950

[32] Readhead Z. In conversation with Zoë Readhead, principal of Summerhill school, Leiston, Suffolk. Journal of Pedagogic Development. 2014;**4**(2):4

Chapter 2

A Study on the Writing Educational Needs by Learner Type: Based on the Basic Class of H University

Duk-Hyun Jeong

Abstract

This study is a plan for reflection on college student writing education and the writing requirements of learners. The purpose is to analyze the educational needs of college students, who are the actual users of college writing education, and to reflect the results in other educational sites actively. In particular, a study was conducted on college students in the basic class, whose writing ability was relatively lower than that of general students. What is particular about this study is that learners were not generally analyzed. This study was conducted within a private university in Korea, and they were first divided into four learning types based on learning motivation and self-control. In addition, by investigating the educational needs according to the four learning types, research was conducted so that they could use them in the educational field in the future. For a systematic study, a questionnaire on learning types and on demand for writing education was produced, and to obtain objective results, frequency analysis, descriptive statistics, t-test, f-test, Borich requirement formula, and statistical analysis, using The Locus for Focus model, were performed. As a result of the study, meaningful results were derived for each learner type. Reflecting on these research results, the researcher hopes that there will be practices such as developing programs that can write an outline well in writing education, strengthening writing correction education, and expanding engaging writing education using media.

Keywords: learning type, educational needs, writing education, Borich needs, basic class

1. Introduction

Modern society in the twenty-first century is talked about as the era of the fourth Industrial Revolution, information society, and knowledge-based society, and it is showing rapid social changes. As a result, the core competencies are emphasized according to the subject change, and accordingly, the direction of education for each subject also changes. Consequently, there is a difference in the core competencies emphasized by the subject. And the focus of education for each issue is also different [1]. Compared to the past, the ability required by a knowledge-based society has also changed significantly. To keep pace with the rapidly changing current era, universities are also establishing a talent image that can immediately respond to future changes in

society and conducting many discussions and research to continue the role of education under the goal.

Students who will lead the era of knowledge and information should have the creativity, thinking skills, and problem-solving skills that this era wants. To meet these needs of the times, we have paid a lot of attention and effort to diversifying the learner-centered curriculum to maximize individual aptitude, ability, and interest, breaking away from traditional teaching methods centered on cramming education in the past. As a result, what received attention was the diversification of the curriculum and the individualization of the curriculum. And in that context, what draws attention is to classify students by level and conduct classes. However, since interest in classes by level is centered on middle and high schools, universities are less interested. In addition, there is indeed research on writing subjects as this interest is concentrated on English or Mathematics.

By experimenting and verifying elementary and middle school students, learning motivation and self-control can be practical criteria for diagnosing positive learning behavior. In this reality, Hwang Mae-Hyang et al.'s research has implications [2]. This study developed a learning type test with learning motivation and self-control as sub-areas to diagnose underachieving students.

This study was aimed at students in the basic class who take a college liberal arts course called <writing> at H University in South Korea. The purpose of the study is to derive learning types by conducting paper-based surveys based on the research of Hwang Mae-hyang et al. and analyzing writing education needs through the importance and execution of writing-related items [2]. And the researcher would like to derive educational implications through the results.

H University has designated and operated the "writing" subject as a required liberal arts subject. Since 3 years ago, 8% of the total classes have been classified separately as basic classes and are assigned 1 hour a week[1]. It is giving practice time. However, it is time to analyze how satisfied students are and what their requirements are by leaving more practice time to the instructor's autonomy.

Therefore, the researcher wants to analyze the educational needs by classifying basic class students by learning type, compiling what they consider essential in writing subjects by type, and what parts of writing subjects lack performance.

To achieve the research purpose, the research contents are set as follows:

- A survey item is determined to investigate the learning type and writing-related.
- Needs of college students in the basic class.
- Learners' learning-type tests are conducted.
- The importance and execution of each item are analyzed for each learning type.
- It analyzes the writing education needs of college students.

[1] In the case of general classes, they are assigned 3 hours a week. The basic class is set for 4 hours a week by adding 1 hour of practice.

Suppose it is a characteristic of this study, in that case, it differs from previous studies in which it classifies college students in the basic class by learning type and analyzes the needs for writing-related items by type.

2. Research method

2.1 Subject of study

The subjects of the survey study were students who took the <Writing> course opened as a liberal arts compulsory subject at H University in South Korea. A total of 105 students, including 77- and 78-minute students, who took the first semester of 2019, and 85- and 86-minute students, who took the second semester of 2019. However, among them, 99 people were subjected to the exclusion of three additional people who did not respond to the learning type test, excluding three who did not respond to the survey after a long absence. All the learners who participated in the class were in the first grade. The ratio of men and women was 43 male learners and 56 female students, with a high proportion of female students. The survey was conducted anonymously, and a 5-point Likert scale was used as the measurement item.

2.2 Measuring tools

To determine the learning type, learning motivation, and self-control measurement, questionnaires were used. The learning motivation was produced by Kim Yong-Rae and a scale of 25 questions is used by Cha Mi-Yang [2, 3]. This questionnaire consisted of six questions about intrinsic motivation, six questions about nonessential motivation, six questions about continuous motivation, and seven questions about class motivation. This scale is a 5-point Likert scale, and the reliability of the scale Cronbach's α is .85, which is reliable. For self-control measurement, a scale in which Cho Hyun-jin organized the self-control scale developed by Tangney, Baumeister, and Bone into 12 questions was used [4, 5]. The reliability of this scale Cronbach's α was .82.

To measure the importance and implementation of writing-related items, a questionnaire item was organized focusing on the contents of lectures during the semester. First, the writing procedure area was set into seven items: to conceive, choosing a topic, searching for references, creating an overview, writing sentences, paragraph writing, and trimming writing. Next, the genre writing area was set to five items: SNS writing, descriptive writing, introduction writing, argumentative writing, and writing of a report. For each writing item, the importance level was selected on the 5-point Likert scale, and the execution level was selected on the 5-point Likert scale. In addition, the educational needs were calculated based on the difference between importance and implementation.

2.3 Analysis method

The average value of the collected data was calculated based on learning motivation and self-control and was classified into four types based on the average value. In other words, the diagnosis was properly divided into four groups: Group 1 is a group with high learning motivation and self-control, Group 2 is a group with high learning motivation and low self-control, Group 3 is a group with low learning motivation and

high self-control, and Group 4 is a group with low learning motivation and self-control. In this way, it was divided into four groups and diagnosed.

In addition, a dependent sample t-verification was conducted to verify the difference between the importance and execution of writing-related items. Subsequently, after calculating the Borich needs, the priority of each item was confirmed. And each item was divided into four areas using The Locus for Focus model. All statistical analysis was analyzed using the SPSS 25.0 program.

2.3.1 Learning type inspection

The learning type test classifies students into four types based on learning motivation and self-control, which are major areas that are closely related to learning and can be changed through guidance and support. The purpose of the learning type test is to provide systematic learning guidance by understanding the causes of poor learning and classifying types.

- Type 1 (Effort Type): Students with excellent learning motivation and self-control skills.
- Type 2 (Synchronous): Students with high learning motivation and low self-control.
- Type 3 (adjustable): Students with low learning motivation but high self-control.
- Type 4 (behavior): Students with low learning motivation and self-control.

2.3.2 IPA

IPA (Imperformance-Performance Analysis) is a statistical technique developed to determine how consumers perceive the key attributes of the product or service to be evaluated. Since it was first presented in the field of business administration in the 1970s, it has now been used in various academic fields [6]. The IPA aims to establish the relative importance and supplier utilization of product features [7].

IPA analysis has the advantage of being able to suggest which areas of priority should be given to practitioners with time and cost limitations [8]. The IPA is also useful in determining what priority should be addressed with a fixed budget and manpower without going through a complicated process [9].

IPA analysis is largely divided into four-step procedures [10]. The first step is to select important attributes. The second step is to conduct a survey. In the third step, an action grid is created. The fourth step is to interpret and evaluate the execution lattice.

2.3.3 Borich needs

Borich's need is a method of surveying to determine the current and desirable levels of a phenomenon and to prioritize each item by applying weights to the desired levels [11]. The Borich needs formula can overcome the shortcomings of t-verification [12]. The t-verification has a limitation in that it only compares the mean of the two levels. If only t-verification is used, it cannot be prioritized. However, applying the

Borich requirement formula makes it possible to prioritize item B because the requirement level is higher.

2.3.4 The Locus for Focus model

The Locus for Focus model is effective in overcoming the shortcomings of the t-test and Borich's requirements [11]. The Locus for Focus model is characterized by determining the significance of the difference between the two variables through the t-test and suggesting priority visually using a coordinate plane. It presents the difference between the current level and the desired level and weights it [13].

The Locus for Focus model analyzes the upper rank of the Borich needs and determines the upper rank of the Borich needs as many as the number included in the first quadrant. As a result, there are cases where results different from the Borich needs are derived.

3. Research results

3.1 Ranking of educational needs

Descriptive statistics were conducted and a corresponding sample t-test was conducted to evaluate the overall level of importance and implementation. **Table 1** shows the results of analyzing the implementation-importance level for 12 items. Looking at the results, the educational needs for "creating an overview" (6.16) were

a	b		c	d	e	f	g	
							h	i
1	The writing process	To conceive	4.12	3.00	3.35	1.12	4.61	6
2		Choosing a topic	4.08	3.04	2.93	1.04	4.24	7
3		Search for references	3.76	3.20	1.46	0.56	2.11	11
4		Creating an overview	4.40	3.00	3.31	1.40	6.16	1
5		Writing sentences	3.92	2.72	2.26	1.20	4.70	5
6		Paragraph writing	4.36	3.04	.89	1.32	5.76	3
7		Trimming of writing	4.20	3.28	1.72	0.92	3.86	9
8	Genre	SNS writing	3.32	2.84	1.43	0.48	1.59	12
9		Descriptive writing	3.56	2.92	1.22	0.64	2.28	10
10		Introduction writing	3.92	2.92	2.85	1.00	3.92	8
11		Argumentative writing	4.48	3.20	3.22	1.28	5.73	4
12		Writing of a report	4.44	3.08	3.27	1.36	6.04	2
			4.04			1.02		

a: Item number, b: Area, c: Severity level, d: Execution figures, e: t, f: Difference, g: Borich's needs, h: Requested figures, i: Overall ranking.

Table 1.
Ranking of educational needs.

the highest. It was followed by "writing of a report" (6.04), "Paragraph writing" (5.76), and "argumentative writing" (5.73).

3.2 Educational needs by learning type

Borich's needs for a total of 12 items, including seven writing process areas and five writing genre areas, such as to conceive, creating an overview, and trimming of writing, was analyzed for each learning type. The next content to be introduced is the analysis of educational needs from types 1 to 4.

3.2.1 Educational needs by learning type (1 type)

Table 2 shows the result of calculating the needs of college students in the first type of basic class. Looking at the results, the educational needs for "6. polishing writing" (6.53) was the highest. Subsequently, the priority was higher in the order of "creating an overview" (5.61), "paragraph writing" (5.12), and "argumentative writing" (3.71).

Next, let us analyze the priority of education needs for the writing process and genre for college students in the basic class using The Locus for Focus model.

The average of the overall importance perceived by college students was 3.95 and the average level of execution was 0.85. Looking at the results of the fourth quadrant based on the average of the important level and the average of the execution needs level, the items corresponding to the first quadrant were found to be items that should be considered first due to high awareness of the importance level and high execution needs level. The questions shown in the first quadrant were 4, 5, 6, 7, and 11, with a total of five items.

Table 3 shows whether the priority derived using Borich's needs calculation formula is derived by the number of items included in the priority area of The Locus for Focus model and whether it overlaps. At this time, question 12 was excluded because the Borich requirement was high, but it was not included in the first quadrant. According to each priority derivation method, the questions that exist in the top priority area that commonly indicates high needs were found in the order of 7, 4, 6,

a	b	c	d	e	f			a	b	c	d	e	f		
					g	h	i						g	h	i
1	The writing process	3.74	2.76	0.97	3.63	4	6	8	Genre	3.26	2.79	0.47	1.54	4	10
2		4.12	3.38	0.74	3.03	6	8	9		3.85	3.50	0.35	1.36	5	12
3		3.59	3.18	0.41	1.48	7	11	10		3.41	2.94	0.47	1.61	3	9
4		4.24	2.91	1.32	5.61	2	2	11		4.26	3.12	1.15	4.89	1	4
5		3.97	3.09	0.88	3.50	5	7	12		3.94	3.00	0.94	3.71	2	5
6		4.35	3.18	1.18	5.12	3	3								
7		4.44	2.97	1.47	6.53	1	1		Overall	3.95		0.85			

a: Item number, b: Area, c: Severity level, d: Execution figures, e: Difference, f: Borich's needs, g: Requested figures, h: Ranking within area, I: Overall ranking.

Table 2.
Analysis of the type 1 learners' needs priorities.

a	b		a	b	
	c	d		c	d
1			7	O	O
2			8		
3			9		
4	O	O	10		
5		O	11	O	O
6	O	O	12	O	

a: Question number of questionnaire, b: To derive priority, c: Borich's needs, d: The Locus for Focus.

Table 3.
Deriving the priority of needs through analyzing the needs of the type 1 learner.

and 11. Looking at the contents, it is in the order of "trimming of writing," "creating an overview," "paragraph writing," and "argumentative writing."

3.2.2 Education needs by learning type (2 types)

Table 4 is the result of calculating the needs of college students in the second type basic class. Looking at the results, the educational needs for "creating an overview" (6.70) was the highest. It was followed by "choosing a topic" (5.98), "paragraph writing" (5.65), and "writing of a report" (5.64).

Next, we analyze the priority of education needs for the writing process and genre for type 2 college students in the basic class using The Locus for Focus model.

The overall importance average recognized by college students was 3.80, and the average level of execution was .91. Looking at the results of the fourth quadrant based on the average of the important level and the average of the execution needs level, the items corresponding to the first quadrant were found to be items that should be considered first due to high awareness of the importance level and high execution

a	b	c	d	e	f			a	b	c	d	e	f		
					g	h	i						g	h	i
1	The writing process	3.94	3.15	0.79	3.13	5	7	8	Genre	3.09	2.68	0.41	1.27	5	11
2		4.24	2.82	1.41	5.98	2	2	9		3.74	3.29	0.44	1.65	4	10
3		3.32	3.03	0.29	0.98	7	12	10		3.38	2.79	0.59	1.99	3	9
4		4.38	2.85	1.53	6.70	1	1	11		3.59	2.59	1.00	3.59	2	5
5		3.76	2.82	0.94	3.54	4	6	12		4.26	2.94	1.32	5.64	1	4
6		4.18	2.82	1.35	5.65	3	3								
7		3.76	2.94	0.82	3.10	6	8		Overall	3.80		0.91			

a: Item number, b: Area, c: Severity level, d: Execution figures, e: Difference, f: Borich's needs, g: Requested figures, h: Ranking within area, i: Overall ranking.

Table 4.
Analysis of the type 2 learners' needs priorities.

a	b		a	b	
	c	d		c	d
1			7		
2	O	O	8		
3			9		
4	O	O	10		
5			11		
6	O	O	12	O	O

a: Question number of questionnaire, b: To derive priority, c: Borich's needs, d: The Locus for Focus.

Table 5.
Deriving the priority of needs through analyzing the needs of the type 2 learner.

needs level. The questions shown in the first quadrant were 4, 2, 6, and 12, with a total of four items.

Table 5 shows whether the priority derived using Borich's needs calculation formula is derived by the number of items included in the priority area of The Locus for Focus model and whether it overlaps. According to each priority deriving method, the questions that exist in the top priority area that commonly indicates high needs were found in the order of 4, 2, 6, and 12. Looking at the contents, it is in the order of "writing an outline," "choosing a topic," "writing a paragraph," and "writing of a report."

3.2.3 Educational needs by learning type (3 types: Synchronous)

Table 6 is the result of calculating the needs of college students in the third type basic class. Looking at the results, the educational needs for "choosing a topic" (6.57) was the highest. It was followed by "writing a Paragraph" (6.27), "writing an Overview" (6.23), and "writing of a report" (5.49).

a	b	c	D	e	f			a	b	c	d	e	f		
					G	h	i						g	h	i
1	The writing process	3.62	2.47	1.15	4.15	4	6	8	Genre	3.15	2.76	0.38	1.20	5	12
2		4.29	2.76	1.53	6.57	1	1	9		3.71	3.24	0.47	1.74	4	11
3		3.53	2.97	0.56	1.97	7	10	10		3.35	2.74	0.62	2.07	3	9
4		4.32	2.88	1.44	6.23	3	3	11		3.88	2.76	1.12	4.34	2	5
5		3.76	2.79	0.97	3.65	5	7	12		4.15	2.82	1.32	5.49	1	4
6		4.35	2.91	1.44	6.27	2	2								
7		4.00	3.18	0.82	3.29	6	8		Overall	3.84		0.99			

a: Item number, b: Area, c: Severity level, d: Execution figures, e: Difference, f: Borich's needs, g: Requested figures, h: Ranking within area, I: Overall ranking.

Table 6.
Analysis of the type 3 learners' needs priorities.

a	b		a	b	
	c	d		c	d
1			7		
2	O	O	8		
3			9		
4	O	O	10		
5			11	O	O
6	O	O	12	O	O

a: Question number of questionnaire, b: To derive priority, c: Borich's needs, d: The Locus for Focus.

Table 7.
Deriving the priority of needs through analyzing the needs of the type 3 learner.

Next, We analyze the priority of education needs for the writing process and genre for type 4 college students in the basic class using The Locus for Focus model.

The overall importance average recognized by college students was 3.84, and the average level of execution was 0.99. Looking at the results of the fourth quadrant based on the average of the important level and the average of the execution needs level, the items corresponding to the first quadrant were found to be items that should be considered first due to high awareness of the importance level and high execution needs level. The questions shown in the first quadrant were 2, 4, 6, 11, and 12, with a total of 5 items.

Table 7 shows whether the priority derived using Borich's needs calculation formula is derived by the number of items included in the priority area of The Locus for Focus model and whether it overlaps. At this time, question 5 was excluded because the Borich needs was high, but it was not included in the first quadrant. According to each priority deriving method, the questions that exist in the top priority area that commonly indicates high needs were found in the order of 2, 6, 4, 12, and 11. Looking at the contents, it is in the order of "deciding a topic," "writing a paragraph," "writing an outline," "writing of a report," and "argumentative writing."

3.2.4 Educational needs by learning type (4 types: Behavioral type)

Table 8 shows the result of calculating the needs of college students in type 4 basic class. Looking at the results, the educational needs for "to conceive" (7.02) was the highest. It was followed by "SNS writing" (5.85), "writing of a report" (5.11), and "choosing a topic" (5.09) in the order of priority.

Next, let us analyze the priority of education needs for the writing process and genre for college students in the basic class using The Locus for Focus model.

The overall importance average recognized by college students was 3.81, and the average level of execution was 0.94. Looking at the results of the fourth quadrant based on the average of the important level and the average of the execution needs level, the items corresponding to the first quadrant were found to be items that should be considered first due to high awareness of the importance level and high execution needs level. The questions shown in the first quadrant were no. 1, 2, 8, and 12, with a total of four items.

a	b	c	d	e	f			a	b	c	d	e	f		
					g	h	i						g	h	i
1	The writing process	4.26	2.62	1.65	7.02	1	1	8	Genre	4.06	2.62	1.44	5.85	1	2
2		4.32	3.15	1.18	5.09	2	4	9		3.65	3.24	0.41	1.50	5	12
3		3.21	2.65	0.56	1.79	7	10	10		3.26	2.74	0.53	1.73	4	11
4		3.53	2.53	1.00	3.53	4	7	11		4.06	3.15	0.91	3.70	3	5
5		3.59	2.97	0.62	2.22	6	9	12		4.24	3.03	1.21	5.11	2	3
6		3.88	2.97	0.91	3.54	3	6								
7		3.71	2.88	0.82	3.05	5	8		Overall	3.81		0.94			

a: Item number, b: Area, c: Severity level, d: Execution figures, e: Difference, f: Borich's needs, g: Requested figures, h: Ranking within area, I: Overall ranking.

Table 8.
Analysis of the type 4 learners' needs priorities.

a	b		a	b	
	c	d		c	d
1	O	O	7		
2	O	O	8	O	O
3			9		
4			10		
5			11		
6			12	O	O

a: Question number of questionnaire, b: To derive priority, c: Borich's needs, d: The Locus for Focus.

Table 9.
Deriving the priority of needs through analyzing the needs of the type 4 learner.

Table 9 shows whether the priority derived using Borich's needs calculation formula is derived by the number of items included in the priority area of The Locus for Focus model and whether it overlaps. According to each priority derivation method, the questions that exist in the top priority area that commonly indicates high needs were found in the order of 1, 8, 12, and 2. Looking at the contents, it is in the order of "to conceive," "SNS writing," "writing of a report," and "choosing a topic."

3.3 Education requirements for the writing process and the genre of writing

Borich's needs for seven writing process areas and five writing genre areas, such as to conceive, writing preparation, and writing plaster, was analyzed for college students in the basic class of H University. The results of this will be introduced in three categories: the case of integrating the writing process and the writing genre area, the case of the writing process, and the case of the writing genre.

a	b	c	d	e	f			a	b	c	d	e	f		
					g	h	i						g	h	i
1	The writing process	4.12	3.00	1.12	4.61	4	6	8	Genre	3.32	2.84	0.48	1.59	5	12
2		4.08	3.04	1.04	4.24	5	7	9		3.56	2.92	0.64	2.28	4	10
3		3.76	3.20	0.56	2.11	7	11	10		3.92	2.92	1.00	3.92	3	8
4		4.40	3.00	1.40	6.16	1	1	11		4.48	3.20	1.28	5.73	2	4
5		3.92	2.72	1.20	4.70	3	5	12		4.44	3.08	1.36	6.04	1	2
6		4.36	3.04	1.32	5.76	2	3								
7		4.20	3.28	0.92	3.86	6	9		Overall	4.04		1.02			

a: Item number, b: Area, c: Severity level, d: Execution figures, e: Difference, f: Borich's needs, g: Requested figures, h: Ranking within area, I: Overall ranking.

Table 10.
Analysis of all learners' needs priorities.

3.3.1 Educational requirements incorporating the writing process and the writing genre area

Table 10 shows the result of calculating the needs of college students. Looking at the results, the educational needs for "creating an overview" (6.16) was the highest. It was followed by "writing of a report" (6.04), "paragraph writing" (5.76), and "argumentative writing" (5.73).

Subsequently, the priority of education needs for the writing process and genre for all college students in the basic class was analyzed using The Locus for Focus model.

The overall importance average recognized by college students was 4.04, and the execution level was 1.02. Looking at the results of the fourth quadrant based on the average of the important level and the average of the execution needs level, the items corresponding to the first quadrant were found to be items that should be considered first due to high awareness of the importance level and high execution needs level. The questions shown in the first quadrant were 1, 2, 4, 6, 11, and 12, with a total of six items.

Table 11 shows whether the priority derived using Borich's needs calculation formula is derived by the number of items included in the priority area of The Locus for Focus model and whether it overlaps. At this time, question 5 was excluded

a	b		a	b	
	c	d		c	d
1	O	O	7		
2		O	8		
3			9		
4	O	O	10		
5	O		11	O	O
6	O	O	12	O	O

a: Question number of questionnaire, b: To derive priority, c: Borich's needs, d: The Locus for Focus.

Table 11.
Deriving the priority of needs through analyzing the needs of all learners.

because the Borich requirement was high, but it was not included in the first quadrant. According to each priority deriving method, the questions that exist in the top priority area that commonly indicates high needs were found in the order of 4, 12, 6, 11, and 6. Looking at the contents, it is in the order of "creating an overview," "writing of a report," "paragraph writing," and "argumentative writing."

3.3.2 Training requirements for the writing course area

Borich's needs was analyzed for a total of seven writing processes, including to conceive, writing preparation, and writing registration, for college students in the basic class of H University.[2] As a result, the needs for the "overview writing" (6.16) item was the highest. Subsequently, "paragraph writing" (5.76), "writing sentences" (4.70), and "to conceive" (4.61) were the highest in order.

Subsequently, the priority of the needs in the writing process for all college students was analyzed using The Locus for Focus model. The average importance of the writing process was 4.12, and the average difference in the execution level was 1.08. According to each priority derivation method, the questions that exist in the top priority area that commonly indicates high needs were found in the order of 4, 6, and 1. Looking at the contents, it was derived in the order of "creating an Overview," "paragraph writing," and "to conceive."

3.3.3 Education requirements for genre writing areas

Borich's needs were analyzed for a total of five writing processes, including SNS writing, explanatory writing, introductory writing, thesis writing, and writing of a report, for college students in the basic class of H University.[3] Looking at the results, "writing of a report" (6.04) was the highest. It was followed by "argumentative writing" (5.73) and "creating an overview" (3.92).

Subsequently, the priority of needs in genre writing was analyzed for all college students using The Locus for Focus model, and the result was that the average of importance in the entire area was 3.94 and the difference from the execution level was 0.95. According to each priority derivation method, the questions that exist in the top priority area that commonly indicates high needs were found in the order of 12 and 11. Looking at the contents, it was derived in the order of "writing of a report" and "argumentative writing."

3.4 Discussion

The statistical results derived above are discussed as follows.

First, as a result of analyzing the educational needs by synthesizing the writing process and writing by genre, two needs for the writing process and two needs for genre writing were derived. It can be seen that the difficulty of the basic process of writing is as great, but the difficulty of the genre is as high as this. The highest need for creating an overview can be seen as emphasized because the most necessary ability for college students to write reports or assignments is the necessary ability to complete the overall framework and submit regulatory tasks. If you do not have this ability, you

[2] Statistics introduction is omitted due to paper relations

[3] Statistics introduction is omitted due to paper relations.

will not be able to fill the given assignment amount, or giving up happens all the time.[4] In addition, even if the portion is filled, there are many cases where good scores are not obtained due to the lack of unity.

The reason why the need for a rewrite appeared low in the writing process is not because of confidence in it, but because there are many ways to solve it on your own without the help of the instructor. The need for this seems to have been low because of the high possibility of solving it. In addition, the low need for SNS writing among various genres reflects the attitude that it can be done without learning. After all, it is viewed as a kind of familiar writing because it is relatively used to writing every day rather than the need for it.

Second, the Borich requirement formula is a proven formula that has already been used in many studies, but it is necessary to consider whether the requirement and practical importance match exactly. Therefore, as a supplementary measure for this, this error was attempted to be eliminated by using The Locus for Focus model. Even though the Borich level was high, it was excluded from the actual priority.

Third, by conducting this study, it is meaningful that the opportunity for reflection was provided through the importance and execution of college students on writing-related items from the perspective of instructors. If the needs of college students, who are consumers, can be well reflected through these survey results, it will be possible to conduct more efficient classes in the future even though it is a limited time. In addition, if a significant amount of time has not been invested, a change in teaching methods can be sought. I think this study provides important information for all of these things.

Based on these topics, an efficient education plan is discussed as follows. The first of the four types of this study (effort type) is a group of students with high learning motivation and self-control. In this type, the high needs were "creating an overview" and "trimming of writing." "Trimming of writing" is a part of the report submitted as a task that wants to be individually guided on what is good and what is insufficient, and wants to get a higher score when submitting the next report. "Creating an overview" is also a part that is always difficult when submitting reports, and is interested in organizing the overall framework, but is also a part that is feeling difficult. They are judged to be learners with a relatively high levels of preparation to start learning behavior among basic classes. Since they have a higher sense of goal and motivation for learning than other learners and are students who can control their behavior, I think guidance that directly helps to learn is needed. An effective guidance plan for them is to acknowledge their learning motivation and self-regulation skills and give appropriate feedback on their needs.

The second type (synchronous type) is a group of students with high learning motivation but low self-control. They showed a high need for creating an overview and choosing a topic. Submit several assignments during the writing class.[5] The students had to, but they had a hard time filling up the amount. Therefore, to fill the designated amount and avoid unnecessary content, it is necessary to guide "choosing a topic" or "creating an overview." Although they are interested in studying, they lack

---

[4] In the case of <writing> subjects, you will submit three assignments during the semester, and you will submit a critique of it after reading the text in the textbook. Each submission requires between 1800 and 2200 characters.

[5] During the first semester of the writing class at H University, the students must submit five writing assignments worth about 2000 characters.

self-control and are weak in temptation, so it is necessary to recognize high learning motivation and guide them to connect them well with academic expectations. It will also be helpful to guide specific goals and motivations related to writing. In addition, it is necessary to help them focus on learning to develop their insufficient self-control and control skills.

The third type (adjustable type) is a group of students with high self-control but low learning motivation. They showed high needs for choosing a topic and paragraph writing. This is related to the lack of motivation to write. They adapt relatively well to school life and do not interfere with learning, but have weak goals or meanings for their studies. They need to have hopes and expectations for their future as well as their learning goals and help them have meaning in their studies. Some of these students are lethargic due to long-term poor learning, and others do not feel the need for voluntary meaning, although they refer to a given task. They need guidance measures to boost their motivation.

The fourth type (behavior type) is a group of students with low learning motivation and self-control. They showed a high need for SNS writing and conceiving. This can be seen as a lack of motivation for writing, making it difficult to figure out what to do from the beginning. In addition, they may tend to act impulsively for immediate satisfaction in behavior without setting goals or values for learning. It is necessary to guide them to have basic learning habits. In addition, considering their low self-control, a pleasant and familiar guidance plan seems to be appropriate [14]. Therefore, it is necessary to actively utilize and guide the media in the stage of envisioning the writing. For example, I think it is necessary to devise writing using pictures or photos or to actively use mind maps.

It can be difficult to satisfy all learners with such diverse needs. However, this study is meaningful in terms of securing basic data to solve the sluggish learning of the basic class by identifying the learning types of basic class learners and identifying the needs of each type.

4. Conclusions and suggestions

This study was conducted to analyze the writing-related education needs of college students organized in the basic class for effective writing education and to create data that can use in future writing education. Currently, the perception of college students with writing education and the degree of implementation were identified, and based on this, presented the ranking of educational needs. In addition, the researcher drew the following conclusions based on these results.

First, as a result of analyzing the educational needs by synthesizing the writing process and writing by genre, two needs for the writing process and two needs for genre writing were derived. The difficulty of the basic writing process is as great, but the difficulty of the genre is as high as this. The highest need for “creating an overview” can see as emphasizing because it is necessary to fill the number of tasks. The reason why the need for “trimming of writing” was low in the writing process is believed to be that there are many ways to solve this problem on your own.

Second, learners were classified into four types, focusing on learning motivation and self-control, and analyzed the needs of each group. As a result, the needs were high in the order of “trimming of writing” and “creating an overview” in Type 1, “Creating an Overview” and “choosing a topic” in Type 2, “choosing a topic” and “paragraph writing” in Type 3, “to conceive” and “SNS writing” in Type 4.

Third, the Borich requirement formula is a proven formula that has already used in many studies, but it is necessary to consider whether the requirement and practical importance match precisely. Therefore, as a supplementary measure for this, this error was attempted to be eliminated by using The Locus for Focus model. In fact, in this study, even though the Borich score was high, it was excluded from the priority. More helpful research is needed to solve this problem.

Fourth, by conducting this study, it is meaningful that the opportunity for reflection is provided through the importance and execution of college students on writing-related items from the instructors' perspective. If the needs of college students who are consumers can be well reflected through these survey results, it will be possible to conduct more efficient classes in the future even though it is a limited time. In addition, if a significant amount of time has not been invested, can seek a change in teaching methods. This study provides essential information for all of these things.

Above all, it is necessary to pay attention to the fact that the execution score is lower than the importance. Based on this, it can be a reference for redesigning or adjusting the existing class. In particular, in the reality of the lack of research data on college students in the basic class, such data are expected to have desirable significance for the basic class by allowing various plans for the basic class to be attempted.

Of course, there are limitations to this study. First, in this study, the degree of implementation and importance of college students' competencies necessary for writing education were analyzed as a questionnaire. In the survey, there is a limit to generalizing the tendency of all Korean college students by conducting it for college students in the basic class of a specific university called H University.

Second, since quantitative research was conducted on college students, further qualitative research is needed to reveal more details. In addition, it would be more helpful if there was a comparative study between the basic and non-basic classes. Third, the lack of presentation of efficient teaching methods based on the results of this study is also a limitation. This part will also be left as a future study.

The suggestions based on the conclusions of this study are as follows. First, this study has a limitation in objectivity because it investigated the degree of implementation and importance of college students in writing education in a self-selection method. Therefore, it is necessary to develop a tool that can more objectively measure execution, significance, and even needs.

Second, the purpose of this study was to analyze implications by measuring the educational needs related to the writing education of college students in the basic class. Based on this, follow-up studies at the level of qualitative research are needed to find out what causes these differences. In addition, most of the 99 survey subjects are college students from H University, so it is necessary to expand this and study more samples.

Author details

Duk-Hyun Jeong
HanNam University, Daejeon, South Korea

*Address all correspondence to: sun1496@hanmail.net

IntechOpen

References

[1] Jung D-h. Analyzing the structural relationship between writing coaching class, learning satisfaction, and learning transfer. Journal of Culture and Convergence. 2019;**41**(1):157-196. Available from: http://www.riss.or.kr/search/detail/DetailView.do?p_mat_type=1a0202e37d52c72d&control_no=fb7a56611c61e4ca6aae8a972f9116fb&keyword=%EC%A0%95%EB%8D%95%ED%98%84

[2] Hwang M-h, Kim Y-b, Ham E-h, Sang-cheol O. Exploration of the type of students with poor learning. Journal of Secondary Education Study. 2012;**60**(1): 191-217. Available from: http://www.riss.or.kr/search/detail/DetailView.do?p_mat_type=1a0202e37d52c72d&control_no=30d90326c946aa67ffe0bdc3ef48d419&keyword=%ED%95%99%EC%8A%B5%EB%B6%80%EC%A7%84%ED%95%99%EC%83%9D%20%EC%9C%A0%ED%98%95%ED%99%94%20%ED%83%90%EC%83%89%20%20%ED%95%99%EC%8A%B5%EB%8F%99%EA%B8%B0%EC%99%80%20%EC%9E%90%EA%B8%B0%ED%86%B5%EC%A0%9C%EC%84%B1%EC%9D%84%20%EC%A4%91%EC%8B%AC%EC%9C%BC%EB%A1%9C

[3] Kim Y-r. Analysis of the influence of contributing factors on academic performance a [doctoral dissertation] at Dongguk University; 1993

[4] Cha M-k. The effect of university student's attribution, self-encouragement, and self-efficacy on learning motivation, a [master's thesis] at Honam University. 2018. Available from: http://www.riss.or.kr/search/detail/DetailView.do?p_mat_type=be54d9b8bc7cdb09&control_no=81bd9df3ffad59a5ffe0bdc3ef48d419&keyword=%EB%8C%80%ED%95%99%EC%83%9D%EC%9D%98%20%EA%B7%80%EC%9D%B8%EC%84%B1%ED%96%A5%EA%B3%BC%20%EC%9E%90%EA%B8%B0%EA%B2%A9%EB%A0%A4%20%EB%B0%8F%20%EC%9E%90%EA%B8%B0%ED%9A%A8%EB%8A%A5%EA%B0%90%EC%9D%B4%20%ED%95%99%EC%8A%B5%EB%8F%99%EA%B8%B0%EC%97%90%20%EB%AF%B8%EC%B9%98%EB%8A%94%20%EC%98%81%ED%96%A5%E2%80%9D

[5] Cho H-j. The effect of time distance, self-control, self-control, and behavior on regret in the decision situation, a [master's thesis] at Ewha Womans University. 2011

[6] Tangney JP, Boone AL, Baumeister RF. High self-control predicts good adjustment, less pathology, better grades, and interpersonal success. In: Self-regulation and self-control. Routledge. 2018. pp. 173-212

[7] Hong S-h, Heo H-j, Song J-h. Evaluation of Pyongyang's competitiveness as a tourist destination using IPA. Journal of Tourism Research. 2005;**19**(2):315-327

[8] Cho Y-j, Ahn K-w, Kim S-o. The improvement direction of the exploration of Naejangsan National Park by analysis of importance and achievement. Forest Economic Research. 2001;**9**(1):15-27

[9] Martilla JA, James JC. Importance-performance analysis. Journal of Marketing. 1977;**41**(1):77-79

[10] Choi J-w. Management and operation plan of Hangang park using the analysis of importance and achievement. Urban Administration Journal. 2008;**21**(3):135-155

[11] Cho D-y et al. Strategy for developing teacher training programs:

Focusing on teacher competency development evaluation index. Korean Education. 2010;**37**(3):175-177

[12] Borich GD. A needs assessment model for conducting follow-up studies. The Journal of Teacher Education. 1980; **31**(3):39-42

[13] Kim Ji-h. A study on the needs of competency-based choral education: focusing on the philosophy of practical music education, [Ph.D. thesis] at Yeungnam University; 2020. pp. 88-94

[14] Choi YH, Oh SC, Kim SW. A study on the learning participation and communication process by learning task types in wiki-based cooperative learning system. Journal of Korean Association for Educational Information and Media. 2010;**16**(1):1-21

Chapter 3

Perspective Chapter: Developing a Semiotic Awareness of Argumentation in Academic Writing for Studies in Higher Education

James Ma

Abstract

The importance of argumentation in academic writing, while recognised historically, has arguably lost prominence alongside the rapid expansion of higher education since the early 1990s in the UK. This has been exacerbated by an increasingly prevalent technological intervention in teaching and learning processes. With this as a background, this chapter presents a discourse analysis of dissertation extracts to articulate the role of intertextuality in governing *interpretative*, *evaluative*, and *concluding* propositions in argumentation. Each proposition is examined as indexed to syntactical compositionality by which a previous proposition elicits a present one that awaits a future one, thus forming an argument. The analysis teases out what is at stake concerning the interdependence of signifying codes in textual relations and functions. It brings to the fore the notion of *instances of signification* that lends itself as a mediational apparatus to what counts as the intertextuality of argumentation – particularly why intertextuality matters in justifying a claim by giving logical reasons rather than wading into mere description or verging on textual turbulence. The chapter concludes by adding to long-standing debates on critical thinking in higher education a quest for a semiotic awareness of argumentation, highlighting the intertextuality of argumentation as facilitating rational deliberation for critical thinking in academic writing.

Keywords: Bakhtin, Kristeva, Peirce, intertextuality, argumentation, instances of signification, critical thinking in academic writing

1. Introduction

There has been a widespread concern with academic writing in higher education over the past few decades. Research has brought to prominence strategies and

resources for facilitating academic literacy attainment [1–6]. It addresses in common parlance the social constructionism of literacy practices. For example, the work of Lea and Street [3] conceptualises 'academic literacies' as a culturally embedded approach to learning activities across academic subjects. Such approaches are constituted in and enacted through the discursivity of knowledge, discourse, and power, addressing the dynamics of meaning in communication and representation. In further exploring the relationship of literacy to learning as to how meanings are constructed and contested among institutions, staff, and students, they have moved away from, for example, an adaptive concern with ways in which students are inducted into the practices of teaching and learning [7], with a sharing of viewpoints from students and staff on cultural and institutional contexts in which their literacy practices are situated. Recognising the variance and multitude of learner identities and positions within and across institutions [8, 9], what is defined as academic literacies shapes and is shaped by the primacy of social, cultural and linguistic factors. Yet, given the ontogenesis of literacy practices in various learning environments, there remain inadequate insights into how students are to become effective and successful communicators during and after their studies. For example, 'an important facet of written communication is being able to critically assess the writing of others, particularly at the graduate level as well as in professional programs' [10]. This calls into question an issue across all disciplinary levels in higher education – the success of universities in equipping students with transferrable knowledge, e.g., knowledge of the underlying substantive structures of the disciplines and that of the syntactic system of such structures for academic inquires made through these disciplines.

Argumentation, as a command of transferable knowledge, is a process of making an argument requiring active engagement and adherence to rules and conventions involved, in which deliberate thought and rationality are exercised. Though recognised historically, the importance of argumentation has arguably lost prominence alongside the rapid expansion of higher education since the early 1990s in the UK. This has been exacerbated by an increasingly prevalent technological intervention in teaching and learning processes. With this as a background, this chapter presents a discourse analysis of dissertation extracts to articulate the role of intertextuality in governing *interpretative*, *evaluative*, and *concluding* propositions in argumentation. Each proposition is examined as indexed to syntactical compositionality by which a previous proposition elicits a present one that awaits a future one, thus forming an argument. The analysis teases out what is at stake concerning the interdependence of signifying codes in textual relations and functions, as exhibited in argumentation. It brings to the fore the notion of *instances of signification* that lends itself as a mediational apparatus to what counts as the intertextuality of argumentation – particularly why intertextuality matters in justifying a claim by giving logical reasons rather than wading into mere description or verging on what might be termed *textual turbulence*.

Within the remainder of this chapter, intertextuality is first discussed in terms of the interdependence of signifying codes in textual relations and functions, following which deduction versus induction is explained. A subsequent analysis of dissertation extracts leads to a discussion of *instances of signification*, shedding light on what is disregarded or unrecognised in students' writing. In conclusion, the chapter adds to long-standing debates on critical thinking in higher education a quest for a semiotic awareness of argumentation, highlighting the intertextuality of argumentation as facilitating rational deliberation for critical thinking in academic writing.

2. Intertextuality as the interdependence of signifying codes in textual relations and functions

Since the late 1920s, Mikhail Bakhtin (1895–1975) has been a gripping reference point in contemporary discussions in literary studies, humanities and beyond. Many of his concepts characterise a nuanced view of elucidating the text and its relation to the world, particularly his dialogic positioning for literary texts [11]:

***The linguistic significance of a given utterance is understood against the background of language, while its actual meaning is understood against the background of other concrete utterances on the same theme, a background made up of contradictory opinions, points of view and value judgements – that is, precisely that background that, as we see, complicates the path of any word towards its object.

Thus, an intersection of semiotic allusions either within the text or across texts emerges from textual relations and functions. The system of signification is upfront, setting in motion a dialogic interpretation of the text in the light of its context. 'Being heard as such is already a dialogic relation. The word wants to be heard, understood, responded to, and again to respond to the response, and so forth *ad infinitum*' [12]. The meaning potential that arises from and flourishes through the dialogic perpetuity of texts becomes an end *in itself* or an 'unlimited semiosis' [13], i.e., a spiral of infinite signs through the interplay of the text and its context, 'perpetually formed anew as a result of reciprocal mediation, renewal and transformation' [14].

This has pertinence for argumentation as it provides a structural insight into textual relations and functions that regulate a logical process in which premises and conclusion are organised in line with rules and conventions. This is not merely a matter of syntactic process as to how one sentence is implicated in the other, i.e., the effect of one subject-predicate sentence on the other subject-predicate sentence. Rather, it is a semiotic process of *truth preservation* by engaging with intertextual signs, i.e., sentences stand in semiotic relation with each other. The truth of the *premises*, i.e., supporting propositions, serves to guarantee the truth of the *conclusion*, i.e., concluding proposition. The conclusion should maintain a foothold in *signification* in terms of conclusion following from the premises. Bakhtinian dialogism offers a means of semiotic deliberation for argumentation, i.e., sign actions upon a series of *interpretative*, *evaluative*, and *concluding* propositions – an interpretative proposition leading to an evaluative proposition then to a concluding proposition. This produces what is in effect an integration of the truth of the premises into the truth of the conclusion and therefore suffices for the intertextual coherence and continuity of argumentation.

Influenced by Bakhtin's dialogism, Julia Kristeva coined *intertextuality* to refer to the dialogic nature of interlocking textual relations and functions inherent in communication and representation. The concept has since become a new strand of modern thought across disciplines, denoting an analytic approach with expository detail [15–18]. It extends a Bakhtin's view that 'the production of meaning happens as a result of purely textual operations independent of historical location' and that 'the multiplicity of possible meanings in a text spring from that text and not from the multiplicity of possible occasions in which the text can be read' [19]. From a social constructionism standpoint, intertextuality has a dialogical property of discourse, particularly the interdependent coordination and stipulation of meaning across texts.

As Fairclough [20] describes, 'the property texts have of being full of snatches of other texts, which may be explicitly demarcated or merged in, and which the text may assimilate, contradict, ironically echo, and so forth'. The inseparability of a text and its social and historical milieus, alongside the relationship between its content and form, is arguably indicative of a heightened registration with the objective world that reflects the teleological dynamism of human interactions with the world, rather than simply ways in which social and cultural conditions coexist.

Thus, the play and counter-play of meaning are under way, rendering argumentation a semiotic process that blends previous propositions into present ones and present propositions into future ones. A text, e.g., a proposition, can be self-generative in the sense that 'it is caught up in a system of references to other books, other texts, other sentences: it is a node within a network' [21]. A given structure in which a text is presented can thus have implications for a larger structure with which it is associated. The constructing of a present proposition not only revolves around the meaning of a past proposition but also engenders and cultivates the constructing of a future proposition. Such homogeneity connects argumentation through a semiotic frame of organising thoughts and words on the move, by which an argument is both constructed through and bestowed by the interdependence of signifying codes.

Despite the relevance of intertextuality for learning, there has been inadequate attention to how intertextuality is implicated in academic writing. This chapter draws on Kristeva's [22] reinterpretation of Bakhtin's conception that 'horizontal axis (subject-addressee) and vertical axis (text-context) coincide, bringing to light an important fact: each word (text) is an intersection of word (texts) where at least one other word (text) be read'. This is also paired with Kristeva's [22] semiotic orientation of text as 'a permutation of texts, intertextuality in the space of a given text' in which 'several utterances, taken from other texts, intersect and neutralise one another'. Hence, in this chapter, intertextuality is confined to the interdependence of signifying codes in textual relations and functions, focusing on compositional moves between the details of an argument. This brings with it a semiotic configuration of writer-reader and text-context relationships, particularly a discernment of *textual*, *intertextual* and *contextual* relations and functions that allow one to see argumentation in a semiotic light.

3. Deduction versus induction

Deduction, as synonymous with Aristotelian syllogism, denotes a customary definition of valid arguments in terms of their *a priori* properties. Deductive argumentation, i.e., making an argument through deductive reasoning, refers to a conceptual move from the general to the specific. That is, if something is true of a category of things in general, then this truth applies to all legitimate members of that category. A deductive argument aims at *particularisation*, in which the conclusion is less general but more specific than the premises. For example, *Cats are nocturnal. This is a cat. It is therefore nocturnal*. Given this process progressing from an *opening* to a *closure*, the conclusion is guaranteed to be valid and reliable. However, if one of the premises is false, the conclusion will be false, albeit rules and conventions for deductive argumentation observed or conformed.

In contrast, inductive argumentation, i.e., making an argument through inductive reasoning, refers to a conceptual move from the specific to the general. That is, if

there is a sequence of individual pieces of information, then such pieces of information can be generalised into a conclusion relating to that sequence of pieces of information. An inductive argument thus works towards *generalisation*, in which the conclusion is less specific but more general than the premises. Given this process proceeding from a *closure* to an *opening*, the conclusion is *not* guaranteed to be valid and reliable. For this reason, the plausibility and reliability of induction have long been interrogated by philosophers [23, 24]. The distinction between deduction and induction is epistemological, given that 'when the mind reasons from cause to effects, the demonstration is called a priori; when from effects to causes the demonstration is called a posteriori' [25].

The *a priori* demonstration of deduction, as pertaining to deductive knowledge of facts, has implication for methodological approaches in humanities, as delineated in Gibson [26]:

***The usual character of an *a priori* approach is a pre-existing body of concepts and ideas that are put to work in the course of doing analysis. Many approaches to analysis have this character, such as critical discourse analysis, rhetorical analysis, semiotic analysis and critical narrative analysis, to name but a few. To work within these approaches/paradigms is to orientate to their body of work and assumptions. Of course, 'orientate to' does not mean 'agree with' or even 'stick within the confines of', but it does mean that there is existing theoretical and conceptual work that is used to organise analysis from the outset of a research project.

This renders a theoretical or conceptual frame of reference for organising academic writing, as exemplified in the following analysis. It corresponds to understanding the validity of argument as fundamental to academic writing. What counts as the validity of argument in *a priori* logical sense is whether the conclusion follows from the premises. The notion that the premises proceed to the conclusion does not entail that the premises are necessarily true. Validity concerns the structure or form of argument, i.e., the logical connection between the premises and the conclusion, rather than the content of an argument. It is noteworthy that validity does not guarantee truth but *truth preservation*, i.e., if the premises are true, the conclusion must be true. It is also necessary to demarcate between argument and statement in term of their properties, given that argument has to do with validity while statement with truthfulness.

4. The analysis

This analysis provides an example of how the concept of intertextuality works to govern *interpretative*, *evaluative*, and *concluding* propositions in argumentation. Each proposition is examined as indexed to syntactical compositionality by which a previous proposition elicits a present one that awaits a future one, thus forming a line of argument. The interdependence of signifying codes in textual relations and functions serves as a conceptual frame of reference for analysing the following dissertation extracts from students on undergraduate programmes in social sciences in a higher education institution in the southeast of England, UK. In general, both dissertations presented a well-structured investigative study, with some insights into literature and occupational issues within subject areas. Permissions were sought prior to, and respect for privacy was observed throughout, the data collection and analysis processes. In this analysis, the term *argument* is used as a countable noun, designating a reason or collection of reasons in argumentation.

4.1 Student dissertation extract: Literacy strategies in other countries

1 It is important to consider approaches to the literacy practices in countries other than the UK. This is
2 because other countries may have successful strategies in place to involve boys in literacy, which
3 could then be adopted by England to improve their practice. Tafa (2008) has compiled a study of the
4 Kindergarten reading and writing curricula in 10 countries in the European Union: Britain, Belgium,
5 France, Finland, Greece, Ireland, Luxembourg, Portugal, Spain and Sweden. It has been found that all
6 of the EU countries discussed now base their teaching guidelines in the kindergarten curricula around
7 the emergent literacy approach. This was defined by Clay (1966), and according to this approach,
8 children begin to read and write through experiences that occur naturally in their home environment,
9 through play with adults and other children. For example, children may begin to narrate a familiar
10 storybook and begin to attach meaning to the words. This highlights the importance of providing
11 opportunities for interaction, investigation, discussion and experimentation at kindergarten, which
12 continue to develop these experiences of early *reading* and writing. This research also shows that all 10
13 EU countries discussed (including the UK) have similar literacy strategies and practices in place.
14
15 In conclusion, Tafa (2008, 168) has found that 'it seems to have become clear in Europe that in order
16 to improve children's education and to prevent academic failure, in order to reduce illiteracy among
17 European citizens and to raise their level of education, emphasis must be placed on kindergarten
18 education'. This also provides evidence for the research of Qinghua *et al* (2005, 157) who claim that
19 'the quality of pre-school education can influence not only children's intellectual advancement but
20 also their social and emotional development, which can lay a solid foundation for children's lifelong
21 learning and be of social and economic benefit in the future'. This therefore highlights the importance
22 of early education and the foundations that are set for children during this crucial pre-school period,
23 especially for literacy.

4.2 Author analysis

The argumentation sets out with an overriding premise: 'It is important to consider approaches to the literacy practices in countries other than the UK' (line 1). This premise includes at least two underlying suppositions: (a) literacy approaches developed in other countries will be beneficial to the UK, and (b) in effect the reader is expected to accept or agree with the author's proposition. It is then followed by a subordinate premise: 'This is because other countries may have successful strategies in place to involve boys in literacy, which could then be adopted by England to improve their practice' (lines 1-3). What is emphasised in this premise are the 'successful strategies' used in other countries to involve boys in literacy. As intertextuality demands, this premise needs to bridge the preceding premise and the succeeding one. However, the reference to Tafa (2008) seems ineffectual for this purpose as it has little logical implication for its preceding premise by means of *categorisation*. To differentiate approaches used in the UK and those used in other European countries requires the conception of *mutual exclusivity*, i.e., different categories should *neither* overlap *nor* entail elements of each other. The follow-up claim, 'It has been found that all of the EU countries discussed now base their teaching guidelines in the kindergarten curricula around the emergent literacy approach' (lines 5-7), becomes logically inconsecutive as it lacks reference to the strategies for involving boys in literacy. While the reference to Clay (1966) exemplifies the 'emergent literacy approach', there is yet little bearing on the possible impact of this approach on boys' engagement with literacy. Further elaborations (lines 9-12) leave the reader in doubt – where are the grounds for accepting this approach as beneficial to the involvement of boys in

literacy? The proposition, 'all 10 EU countries discussed (including the UK) have similar literacy strategies and practices in place' (lines 12-13), comes to seem problematic if it is to be argued that 'other countries may have successful strategies in place to involve boys in literacy' (line 2). This strays even further from the point, given that this proposition fails to preserve the truth of the main and subordinate premises (lines 1-3).

Such deficiency in recourse to the intertextuality of relations and functions makes the argument plunge further into a logical turmoil within the second paragraph. The premises established in support of the conclusion are seemingly inadequate in providing necessary intertextual continuity and consistency as the grounds for the conclusion. This is observed through an absence of a series of coherent moves from one proposition to another towards the conclusion of the argument. The concluding proposition centres on the claim 'emphasis must be placed on kindergarten education' (lines 17-18). Though this may be inferred as having implication for involving boys in literacy, there is no attempt to specify the 'approaches to the literacy practices in countries other than the UK' (line 1). Moreover, given that this proposition entails an early proposition, 'It has been found that all of the EU countries discussed now base their teaching guidelines in the kindergarten curricula around the emergent literacy approach' (lines 5-7), it begs the question on logical legitimacy. Rather than being proved, this proposition is simply granted, i.e., the author simply assumes what he or she should be proving. This renders further evaluative propositions (18-23) untenable, albeit with an attempt to strengthen what has already been put forward through the argumentation.

Entangled with misperceived textual relations and functions, the interdependence of signifying codes is in jeopardy concerning a syllogistic ordering of premises and conclusion. This makes the line of argument even more disordered. The proposition in the subordinate premise (lines 1-3) entails a hypothetical form of syllogism explaining that one thing leads to another, with 'if' to introduce an antecedent and 'then' a consequent. That is, *if* other countries have successful strategies in place to involve boys in literacy, *then* these strategies can be adopted by England. In compliance with this hypothetical syllogism, a valid argument would have been constructed as follows:

Premise 1	If other countries have successful strategies in place to involve boys in literacy, then these strategies can be adopted by England.
Premise 2	Other countries have successful strategies in place to involve boys in literacy.
	———
Conclusion	Therefore, these strategies can be adopted by England.

This, as the function of the proposition (lines 1-3), fails to actualise itself in argumentation. There is a lack of attention to intertextuality in terms of affirming that other countries have successful strategies in place to involve boys in literacy. This triggers a logical impasse to such an extent that the grounds for a deduction-based conclusion are absent, i.e., the conclusion does not follow from the premises. It leaves the reader in doubt as to (a) the claim serving as a consequent of the argument, (b) the warrant for this claim, and (c) the case to be made for the conclusion.

4.3 Student dissertation extract: Harnessing nature's metaphors for new understandings and possibilities

1 The use of various ways of experiencing nature in order to stimulate and support the whole self is
2 further extended by the use of nature's features and processes as metaphors of the self. Worsham and
3 Goodvin (2007) describe the natural environment in a therapeutic horticulture project as providing a
4 'metaphorical environment', since metaphorical meanings can be accessed through observing nature.
5 Individuals can also create metaphors through physically interacting with nature. 'Building a Home-
6 in-Nature' is a nature therapy method in which the process of constructing a den in a natural
7 environment, using nature's resources, is a concrete, non-verbal metaphor relating to the client's
8 actual home and ideas about the psychological concept of 'home' (Berger 2004; Berger and McLeod
9 2006). Moreover, the physical construction of the home in nature may involve 'a parallel process of
10 building a safe, personal, inner home' (Berger 2004, 2006, 2007). In this way, creation of metaphors
11 from nature may prompt personal change (Pedretti-Burls 2007).
12
13 In particular, an approach that draws parallels between natural cycles and the self can prompt
14 transformation. Observation of and involvement in life cycles, for example, the growth, survival and
15 death of a plant, may stimulate expression of similar stories within an individual (Berger and Lahad
16 2009). Berger (2008a, 271) states that this may help clients to put their own life stories in the context
17 of 'a primal sense of continuity and cycle' and to understand that they and others are a part of this
18 cycle (Berger and Lahad 2009). Similarly, Farrell-Erickson (2009) suggests that observation of animal
19 interactions may support children in making sense of their own interactions and attachments with
20 others. Making connections between ourselves and natural processes in these ways is powerful
21 because nature provides the necessary distancing but also an opportunity for the normalising of
22 experiences (Berger 2008b; Berger and Lahad 2009). Moreover, interaction with nature in order to
23 change the story in nature, for example, by caring for animals, can help an individual to broaden their
24 narratives (Berger 2003, 2007, in Berger 2008b; Berger and McLeod 2006), achieve reconciliation
25 with events (Pedretti-Burls 2007), develop a sense of hope and possibility (Berger 2008; Berger and
26 McLeod 2006), and become more resilient (Berger and Lahad 2009).

4.4 Author analysis

The first paragraph commences with a primary or leading premise of argument: 'The use of various ways of experiencing nature in order to stimulate and support the whole self is further extended by the use of nature's features and processes as metaphors of the self' (lines 1-2). What is subsequently required as a secondary or subordinate premise is the literature on this topic to substantiate the primary premise. References to Worsham and Goodvin (2007), Berger (2004), and Berger and McLeod (2006) are relevant and blended through textual relations (lines 2-9). The use of 'moreover' (line 9) is apposite in introducing an additional proposition (lines 9-10). However, considering that a self-evident proposition that humans are conceptual beings is encapsulated in the primary premise in term of 'the whole self', this additional proposition with the quotation of 'a parallel process of building a safe, personal, inner home' (lines 9-10) becomes superfluous in effect. Moreover, resorting to such quotation – rather than paraphrasing in the student's own words – is perhaps suggestive of some uncertainty in fully understanding the quoted author's meaning. As it stands, this additional proposition does not provide a compelling account of the intrapersonal dimension of metaphorical thought in eliciting personal change. From an *intertextual* viewpoint, this adds little weight to what the subsequent proposition contends: 'In this way, creation of metaphors from nature may prompt personal change' (lines 10-11). This proposition is not self-explanatory but conditional as it needs to be endorsed by the evidence presented in the previous proposition; it would

otherwise remain a supposition rather than a proposition. From a syntactical compositionality perspective (see Section 5.1), this proposition is such that the sense is elusive with an *intertextual* leap from the additional proposition (lines 9-10).

As the argument proceeds through to the second paragraph, the use of 'in particular' is *intertextual* as it forges a link between what is previously mentioned and what is now introduced as an example of personal transformation (lines 13-14). Three consecutive premises (lines 14-20) lead to a conclusion: 'Making connections between ourselves and natural processes in these ways is powerful because nature provides the necessary distancing but also an opportunity for the normalising of experiences' (lines 20-22). Given the *a priori* nature of deductive argumentation (see Section 3), the validity of this conclusion lies in a causal connection, rather than a transitory succession rendered by intuitive, wishful thinking. This concerns whether the instance that 'nature provides the necessary distancing but also an opportunity for the normalising of experiences' (lines 21-22) can serve as a prerequisite that are both *necessary* and *sufficient* for the instance that humans make connections between themselves and natural processes. Yet, the three consecutive premises (lines 14-20) cannot be fully identified as the *necessary conditions* for what is claimed in the subordinate clause: 'because nature provides the necessary distancing but also an opportunity for the normalising of experiences' (lines 21-22). It is apparent that these premises do not form the *sufficient conditions* for the conclusion. This raises a question of how the logical sequence in the concluding proposition can be justifiably asserted to be both *necessary* and *sufficient*.

As it stands, the composition is descriptive in style and exploratory in disguise. An overall sense of intertextuality comes to seem tenuous, haphazard, and less filtered through an awareness of the interdependence of signifying codes in textual relations and functions. This may be attributed to an unfledged understanding of how such relations and functions are semiotically bonded to accomplish a cogent line of argument. Furthermore, circuitous references to Berger and the co-authors in a skimpy, unscrupulous manner have lessened the effect on the reader to engage with a more succinct and reasoned approach to thematic analysis necessary for literature review.

5. Discussion

The preceding analysis brings into view the role of intertextuality in governing *interpretative*, *evaluative* and *concluding* propositions in argumentation. Each proposition is indexed to compositional connectivity by which a previous proposition elicits a present one that awaits a future one, thus forging ahead with an argument. The notion of *instances of signification* as a mediational apparatus in argumentation helps understand why intertextuality matters in justifying a claim by giving logical reasons rather than wading into mere description or verging on what might be termed *textual turbulence*. Endorsed by instances of signification, the intertextuality of argumentation in turn provides affordance for 'the production and interpretation of signs constitutive of meaning making' [27], resonant with Peirce's [28] evolutionist approach to the sign that 'it shall be interpreted in another sign; and its whole purport lies in the special character which it imparts to that interpretation'. Therefore, understanding argumentation as sign action makes the interdependence of signifying codes more bound up with what goes on in argumentation where such codes mediate and endorse each other by 'creating an aura of semiotic unity and enrichment' [29]. Implications of this analysis for academic writing are as follows:

5.1 Sign action as a semiotic awareness of intertextual engagement and relationship

As revealed in the analysis, intertextuality brings with it sign action as a semiotic awareness of intertextual engagement and relationship whereby there is no single, isolatable process of knowing. The textual relations and functions necessitate the response to a previous sign action but also the anticipation of a future one in argumentation. For example, there are misconceptions in students about differences between *conclusion* and *summary* due to a lack of recognition of sign action in intertextual thinking. Conclusion is where premises culminates to forge an ending proposition, whereas summary is mere reiteration of key propositions established in the main text. If the conclusion is to be handled as a summary, then argumentation becomes intertextually inconsistent. That is, the writer should not conclude something to be valid simply by assuming that something to be the case. As logical syllogism demands, the conclusion should not contain any of the supporting premises, or it *begs the question*. A valid argument is a set of incremental propositions logically organised and syntactically mediated. Without appreciation of this, an argument can be muddled or derailed, resulting in falsehood or absurdity.

Moreover, the notion of 'syntactical compositionality' [30] is important. A sentence is constructed by sub-sentential components, e.g., words and phrases, and the ways these components are combined are not only syntactical but semiotic in nature. The function of linguistic representation manifests itself as sign action through which words and phrases are constructed into an entire syntactic structure, e.g., the logical form of an argument. Although the linguistic meaning of a sentence is encoded and decoded by means of the grammar of a given language, the complexity of such meaning lies in not simply the grammar but the sign action of both the speaker or writer and the listener or reader. As evident in lines 9-11 in Section 4.3, weight is given to the direct quotation 'a parallel process of building a safe, personal, inner home', with a textual leap from the additional proposition introduced by 'moreover' (line 9), thus making the reader wonder about the writer's intention. This may be implicative of the writer's scant comprehension of the syntactic realm of language as sign action in linguistic representation.

It is also worth mentioning the intentionality of semantic and pragmatic meaning in linguistic interaction. Semantics concerns the relationship between linguistic utterances and the syntactic rules deployed to govern such utterances. Semantic structure involves a part-whole relationship, i.e., the meaning of a sentence is determined by what the constituent words and phrases are meant and how they are combined. Pragmatics nevertheless concerns the relationship between the speaker or writer and what he or she says or writes. It is confined to the functionality of linguistic communication and representation. As shown in the analysis, semantic meaning can yield answers to questions of how understanding of meaning can be obtained and what significance of such understanding may be for the writer. In contrast with the intrinsic nature of semantic intentionality with which the writer encodes or decodes a sentence based on grammatical rules of a given language, pragmatic intentionality implies the meaning of a sentence beyond what is logically manifested by that sentence, i.e., 'what is done with language beyond saying' [31]. This reflects the interpersonal relationships through which the utterance of that sentence is encoded or decoded. The assumption that pragmatic intentionality stands in relation to its context suggests that meaning can change as a result of the interaction of a sentence with the context from which it derives. Such contextual factors can have subtle or nuanced meaning embedded in the

connection between what is said and what is conveyed. Thus, intertextual engagement requires the writer to make pragmatic inferences, i.e., pragmatic meaning can be obtained by engaging with the implicature located in an utterance.

5.2 Critical thinking and knowledge transfer

Moving to a wider educational context, this analysis has relevance for critical thinking in teaching and learning in higher education. Predicated on 'intellectualism as central to the ethnography of university life' [32], students and teachers are to understand that 'the university world is generally associated with rationality, methodological principles, objectivity and logical argument' [33]. Critical thinking is a way of developing students' capacity to challenge different assumptions and perceptions through theorisation, rational thinking, and evaluation [34–36]. As observed in the analysis, how thoughts and words come together in argumentation is important to critical engagement, given the connections between intertextuality and sign action. This can broaden students' horizon in terms of what there is to be known in a wider social, cultural, and historical context. How can critical thinking be honed as a mode of cognition that foreground deliberate thought and rationality? Given critical thinking as a ubiquitous concept in higher education, why has it come to seem more routinely expected by institutions than habitually exercised by students? To what extent can critical thinking be sustained through an awareness of the intertextuality of argumentation? Arguably, students' greater engagement with critical thinking in academic writing becomes possible if the intertextuality of argumentation is cultivated as a collective awareness rather than simply as a condition or preference of an individual writer.

Further pedagogical implication can be addressed concerning the development of transferable knowledge in academic writing. First, given that reference to literature is integral part of academic writing, students are expected to research the documentary evidence or evaluate current developments of their subject areas of interest. In either case, their references to other authors are often restricted to adopting their viewpoints, rather than using them to cast light on the making of their own argument. The use of literature as such sometimes outweighs critical thinking and rationality that students are anticipated to demonstrate. This renders their argument incomplete, distorted or faulty, e.g., failure to organise propositions into a logical sequence, as shown in Section 4.1. By enacting the intertextuality of argumentation, critical thinking may be more effectively exercised in the review of literature.

Second, research activities involving undergraduate students across various disciplines in humanities and social sciences are often tutor-dependent or involuntarily actualised, particularly when assigned to them as a mere task-based activity. Critical thinking involved appears to be channelled towards certain directions by external forces, e.g., tutors' consistent or contingent intervention, rather than through students' own commitment and dedication. This results in students' cognizance less than discerning or theory-informed to the point where little is accomplished in a proactive manner, as reflected in academic writing. With a heightened awareness of the intertextuality of argumentation, critical thinking can become more integrated into the pursuit of knowledge in that words and thoughts are indispensable for 'the centrality of intellectual well-being in higher education' [32].

6. Concluding remarks

Concluding on a note of dialecticism, the post-Kantian perspective of knowledge and truth resonates with an axiological stance in this chapter, that is, the internal factors within an individual are fundamental to learning and development, only through which can the external factors become operative. The interdependence of signifying codes in textual relations and functions points to the intertextual necessity of argumentation as one's determination to uphold a semiotic awareness of syntactical compositionality. Arguably, when the intertextuality of argumentation is called for in higher education, such awareness in turn works to sustain a mode of sensitising intertextuality as a conceptual frame of reference in academic writing. In the context of 'widening participation in higher education' [37], the intertextuality of argumentation can be of instrumental value for developing transferable knowledge in teaching and learning processes [38]. Furthermore, given an increasing demand for postgraduate qualifications by employers, this chapter may throw light on the provision of pre-sessional study skills courses across diverse academic programmes, including TESOL and Applied Linguistics.

Acknowledgements

The author would like to thank the students involved; without their support, the collection of data for this study would have been impossible. This chapter is a reduced version of the article published in *Language and Semiotic Studies* in 2023 [38].

Author details

James Ma
Alumnus of the Universities of Oxford, Bristol, Nottingham, UK

*Address all correspondence to: jamesma320@gmail.com

References

[1] Ganobcsik-Williams L. A Report on the Teaching of Writing in UK Higher Education. London: Royal Literary Fund; 2004

[2] Ganobcsik-Williams L. Teaching Academic Writing in UK Higher Education: Theories, Practices and Model. Basingstoke: Palgrave MacMillan; 2006

[3] Lea M, Street B. Student writing in higher education: An academic literacies approach. Studies in Higher Education. 1998;**23**(2):157-172. DOI: 10.1080/03075079812331380364

[4] Lea M, Stierer B, editors. Student Writing in Higher Education: New contexts. Buckingham: Society for Research into Higher Education and Open University Press; 2000

[5] Lillis T. An 'academic literacies' approach to student writing in higher education: Drawing on Bakhtin to move from critique to design. Language and Education. 2003;**17**(3): 192-207. DOI: 10.1080/09500780308666848

[6] Lillis T. Moving towards an academic literacies pedagogy: 'Dialogues of participation'. In: Ganobcsik-Williams L, editor. Academic Writing in Britain: Theories and Practices of an Emerging Field. Basingstoke, Hampshire: Palgrave; 2006. pp. 30-45

[7] Gibbs G. Improving Student Learning: Theory and Practice. Oxford: Oxford Centre for Staff Development; 1994

[8] Street B. Academic literacies. In: Jones C, Turner J, Street B, editors. Students Writing in the University: Cultural and Epistemological Issues. Amsterdam: John Benjamins; 1999. pp. 193-228

[9] Street B. Academic literacies and the new orders: implications for research and practice in student writing in higher education. Learning and Teaching in the Social Sciences. 2004;**1**(1):9-20

[10] Defazio J, Jones J, Tennant F, Hook SA. Academic literacy: The importance and impact of writing across the curriculum – A case study. Journal of the Scholarship of Teaching and Learning. 2010;**10**(2):34-47 Available from: https://eric.ed.gov/?id=EJ890711

[11] Bakhtin M. The Dialogic Imagination: Four essays. Austin: University of Texas Press; 1981

[12] Bakhtin M. Speech Genres and Other Late Essays. Austin: University of Texas Press; 1986

[13] Eco U. A Theory of Semiotics. Bloomington, IN: Indiana University Press; 1979

[14] Ma J. Exploring the complementary effect of post-structuralism on sociocultural theory of mind and activity. Social Semiotics. 2013;**23**(3):444-456. DOI: 10.1080/10350330.2012.741398

[15] Derrida J. Speech and Phenomena, and Other Essays on Husserl's Theory of Sign. Evanston: Northwestern University Press; 1973

[16] Young R, editor. Untying the Text: A Post-structuralist Reader. London: Routledge and Kegan Paul; 1981

[17] Bhabha HK. The Location of Culture. London: Routledge; 1994

[18] Ffrench P, Lack R-F, editors. The Tel Quel Reader. London: Routledge; 1998

[19] Dentith S. Bakhtinian Thought: An Introductory Reader. London: Routledge; 1995

[20] Fairclough N. Discourse and Social Change. Cambridge: Polity Press; 1992

[21] Foucault M. The Archaeology of Knowledge. London: Tavistock; 1974

[22] Kristeva J. Desire in Language: A Semiotic Approach to Literature and Art. New York: Columbia University Press; 1980

[23] Peirce CS. The nature of meaning. In: Project PE, editor. The Essential Peirce: Selected Philosophical Writings (1893–1913). Vol. 2. Bloomington, IN: Indiana University Press; 1998. pp. 208-225

[24] Popper K. The Logic of Scientific Discovery. London: Routledge; 2002

[25] Arnauld A, Nicole P. The Art of Thinking: Port-Royal Logic, trans. by J. Dickoff and P. James. Indianapolis: Bobbs-Merrill; 1964

[26] Gibson W. Qualitative research as a method of enquiry in education. In: Hartas D, editor. Educational Research and Inquiry: Qualitative and Quantitative Approaches. London: Continuum; 2010. pp. 54-64

[27] Ma J. Good packaging can be misleading: A Peircean contribution to intersubjectivity and Vygotskian sign mediation. Language and Sociocultural Theory. 2021;7(2):176-201. DOI: 10.1558/lst.18833

[28] Peirce CS. In: Hoopes J, Hill C, editors. Peirce on Signs. London: University of North Carolina Press; 1991

[29] Ma J. The synergy of Peirce and Vygotsky as an analytical approach to the multimodality of semiotic mediation. Mind, Culture, and Activity. 2014;**21**(4): 374-389. DOI: 10.1080/10749039.2014.913294

[30] Searle JR. What is language: Some preliminary remarks. In: Tsohatzidis SL, editor. John Searle's Philosophy of Language: Force, Meaning, and Mind. Cambridge: Cambridge University Press; 2007. pp. 15-45

[31] Korta K, Perry J. How to say things with words. In: Tsohatzidis SL, editor. John Searle's Philosophy of Language: Force, Meaning, and Mind. Cambridge: Cambridge University Press; 2007. pp. 169-189

[32] Ma J. Semiotising the student perception of learning outcomes in British higher education. Social Semiotics. 2017;**27**(2):227-242. DOI: 10.1080/10350330.2016.1189234

[33] Bloch C. Passion and Paranoia: Emotions and the Culture of Emotion in Academia. Farnham: Ashgate; 2012

[34] Halpern DF. Teaching for critical thinking: Helping college students develop the skills and dispositions of a critical thinker. New Directions for Teaching and Learning. 1999;**80**:69-74. DOI: 10.1002/tl.8005

[35] Paul R, Elder L. Critical thinking: Teaching students how to study and learn. Journal of Developmental Education. 2003;**26**(3):36-37. Available from: https://eric.ed.gov/?id=EJ668423

[36] Mason M, editor. Critical Thinking and Learning. Oxford: Blackwell Publishing; 2008

[37] National Audit Office. Widening Participation in Higher Education. London: Stationary Office; 2008

[38] Ma J. The intertextuality of argumentation: a semiotic approach to academic writing in higher education. Language and Semiotic Studies. 2023;**9**(1):14-32. DOI: 10.1515/lass-2022-0013

Chapter 4

Perspective Chapter: The Metaverse for Education

Nehme Azoury and Cynthia Hajj

Abstract

Due to ever-evolving teaching methods and technologies, the education sector has undergone and still undergoes several advances. The issue of knowledge creation and application through tutoring has evolved into the primary source of competitive advantage among colleges and a crucial element for success. In a turbulent world full of competitiveness, educational institutions and establishments strive to continuously provide excellence through top-notch education, international partnerships, collaborations, acknowledgments, and accreditations as well as updated technological tools such as e-learning platforms and online labs/workshops, constant investment in each person's human capital. It is hoped that this would improve people's knowledge, abilities, experiences, and cultural capital. Our digital lives have advanced quickly over the past two years to the point where living online and offline are now equally important. The purpose of this chapter is to discuss the significance of sustaining education while taking into consideration the undeniable technological advances. This chapter adopts a descriptive/narrative methodology approach. As a result, it can be concluded that, if implemented properly, virtual collaboration and success will become essential skills that professionals across almost all sectors would master. Hence, upcoming research could include the role of the metaverse in education on another aspect of the SGDs like "no poverty."

Keywords: higher education, metaverse, human capital, extended reality, knowledge creation

1. Introduction

Since the COVID-19 epidemic was announced in 2020, people have been compelled to live apart from one another [1]. Several real-world activities are moving to the virtual world. Online meetings, distant schooling, telecommuting, and shopping have all become commonplace in modern society. As a result, the need for more sophisticated virtual worlds has increased as humankind's desire to push the limits of the real world has increased [2]. The metaverse, a 3D digital realm where the line between virtual and reality has broken down, is drawing increasing amounts of attention because of advancements in virtual reality (VR), augmented reality (AR), artificial intelligence (AI), and blockchain. The internet is expected to

significantly alter how we connect with the world and has been dubbed the "Next Generation Internet" [3].

Metaverse has been evolving since the early 2000s but, until 2019, the progress has been moving slowly. In the last quarter of 2019, a global pandemic erupted, resulting in a complete lockdown worldwide. The announcement of the COVID-19 as a global pandemic and emergency had lots of effects on the students and the future of their education. Humanity was forced to rethink its teaching and learning methods, eyeing the metaverse as a possible and urgent solution to be implemented.

The strict measures taken to avoid the spread of the virus restricted physical interactions and transformed into virtual communication on platforms such as microsoft teams, zoom, and many more. As a result, many countries saw an opportunity to enhance online learning and look for much more advanced technology, which triggered VR, AR, and AI. Metaverse erupted into a 3D digital space that reflects the real world through digital agents and allows for interactions among people.

2. A new way to teach and learn

2.1 Sustainable development goals: Toward a new sustainability paradigm

The 2000 millennium conference celebrations unveiled the millennium declaration and eight millennium improvement goals namely "ending extreme poverty and hunger, achieving the highest levels of education, promoting gender equality and women's empowerment, reducing child mortality, improving maternal health, combating HIV/AIDS, fighting malaria and other diseases, securing the environment, and increasing sustainability and building global environmental partnerships for development."

Although the targets have drawn criticism for not rigorously upholding "human rights norms and values" [4], they could still be pertinent and particularly helpful for poor countries [5].

Another criticism of the MDGs is that in some regions, such as Africa, the strong personalities and arrangements of the MDGs have had a negative impact, making their achievements seem to be a failure [6]. Nonetheless, this agreement was a significant step forward since it wrote down a shared will on the part of nations to implement several sustainability-related measures and collaborate to find effective solutions. Many "generalists" and inconsistent compliance have been mentioned as negatives, along with the difficulties of quantifying their aims.

The goals have been set up to be achieved by 2015; while not all goals have been completed, certain advancements have been made. Another criticism of the MDGs is that they have had a negative impact in some regions, such as Africa, making the advancements appear to be failures [6]. However, this agreement marked a crucial turning point since it proved a universal willingness to undertake several sustainability-related initiatives and work together to discover practical answers. Too many "generalists," uneven compliance, and trouble determining their aims have all been cited as issues. Although not all the goals have been reached, certain gains have been made since the goals were expected to be finished by 2015.

The MDGs and SDGs are highly regarded due to the attention and dedication of many nations throughout the world in the sustainable boom. The MDGs target impoverished nations, but the SDGs concentrate on all countries, regardless of their level of development, and have a different point of emphasis indicated design

(e.g., the SDGs consist of new SDG11 for societies). In this scope, attaining sustainability may be difficult and calls for the involvement of all social stakeholders [7].

With the primary objective of fostering peace and prosperity, the United Nations (UN) and its member States unveiled the 2030 agenda for sustainable development in 2015. This agenda ensures that economic progress is being made in all countries. These are all summarized in the 17 sustainable development goals known as the SDGs. The goals are based on contemporary human development concepts that emphasize health and education and are based on continued economic growth that guarantees a permanent surplus of all kinds of commodities that can be used to "satisfy" development. The world is overcoming the old notion of "process" to satisfy human needs and increase well-being (**Table 1**). When understood in this way, human development aims at human well-being and quality of life.

2.2 Institutions of higher education and sustainability

Universities play a significant role in the formation of future leaders who will support the UN's sustainable development goals (SDGs) in their effective implementation. Even though the SDGs are being implemented in a range of various locations, higher education institutions play a significant role in cultivating a mentality that makes the SDGs' guiding principles more well-known. Building sustainability is fueled by education, one of the most important communication instruments and the cornerstone of the "sustainable attitude." "A systemic approach to knowing, one which goes beyond technical knowledge and even understands the principles of a healthy environment and a functional society," is included in this idea.

One of the abilities required to understand the concept of sustainability, for instance, is system thinking. This is so because sustainability balances the three elements of the environment, society, and economy. The economies that sustain people's livelihoods and improve their overall quality of life, according to ESCAP [8], change

MGDs	SDGs		
End poverty and hunger	No poverty	Industry, innovation, and infrastructure	Partnerships to achieve the goal
Achieve universal Primary education	Zero hunger	Reduced inequality	
Promote gender equality and empower women	Good health and well-being	Sustainable cities and communities	
Reduce child mortality	Quality education	Responsible consumption and production	
Improve maternal health	Gender equality	Climate action	
Combat HIV/AIDS, malaria, and other diseases	Clean water and sanitation	Life below water	
Ensure environmental sustainability	Affordable and clean energy	Life on land	
Develop a global partnership for the development	Decent work and economic growth	Peace and justice strong institutions	

Table 1.
Difference between MGDs and SDGs.

people and the character of the society in which they live and, in turn, influence people and society. For economies and people, environments supply services that are both life-giving and economically significant. In this instance, systems thinking is essential for fostering a comprehensive method of issue analysis [8].

Several significant pieces of work have recently assessed how higher education affects sustainability [9]. A sustainability-based education influences educational material, as well as the related procedures and results [10]. According to Fien [11], human structures and institutions should be used to implement higher education strategies to promote sustainability. According to [12] found the greatest hurdle of SD in universities and the lack of concern for sustainability in the areas of management and control.

According to some authors (for example, see [13]), the SDGs can be used in research to solve social problems, and sustainability technologies must support the transition to sustainability. According to Filho et al. [12], a few specific "elements" of sustainability research dealing with the implementation of the SDGs, particularly interdisciplinary and interdisciplinary sustainability research, the development of research at an intimate level, and the social dissemination of scientific grabs the attention of stakeholders toward social communication, and linkages of science and politics. To fulfill its mission, universities must play a key role in responding to the adoption of SD.

Over the decades, the field of education has undergone experienced several improvements and changes due to ever-evolving technology and educational tools. The topic of producing knowledge and implementing experience through tutoring is a core competitive advantage of the university and a key factor in its success. This subject is influenced by psychological and social dimensions and depends on the idiosyncrasies of the environment in which this research topic is addressed. Moreover, in a competitive and turbulent world, educational institutions and facilities are continuously improving through quality teaching, international partnerships and collaborations, accreditation and accreditation, and modern technological tools, such as e-learning platforms and online labs, strives to achieve excellence in workshops and constant investment in individual human capital. The expected result is that individuals will improve their knowledge, skills, experience, and cultural capital.

Most empirical studies consider all these components to increase the relevance and quality of the materials taught and uncover new needs and services each year to attract learners. Nevertheless, we are unaware of the fact that all these properties are of significant importance and have contributed in many ways to the development of knowledge acquisition. Diversification in educational methods is neglected. In the middle east, there is little interest in researching pedagogy and its impact on knowledge production, human capital, and economic life. To the best of our knowledge, we analyze the key factors that educators can incorporate into their tutoring and/or transform teaching methods that can support and inspire students through diverse learning styles. Few, if any, studies have considered this.

Additionally, most educational institutions typically employ a lecture-based approach. This also refers to teacher-centered education. This is the most common method most learners are familiar with. Over the years, the same teaching style has continued, but students are expected not to talk to each other, and the teacher, the source of knowledge, informs students and teaches them how to remember. Put students back on a test designed to measure how much content they remember, not how much they actually remember and fully understand. Plutarch (AD 46–120) said, "The mind is not a vessel to be filled, but wood to be burned." After years of

repeating the same teaching pattern, students became demotivated and less inspired by knowledge. Given the existence of such advanced technology, most students tend to use abbreviations to obtain information and answers to their questions, regardless of accuracy or reliability.

They are content with what they have and no longer have the will to criticize themselves or challenge themselves for additional information. Eventually, the same students may become teachers and contribute to knowledge distortions. Following what Albert Einstein (1879–1955) once said*: "Education is not to learn facts, but to train the thinking mind."* It has been proven. Today, these universities are interested in obtaining internationally recognized accreditations that take knowledge production to new levels while setting innovative, updated, and improved standards. Therefore, in the quest for continuous development, their role shifts from providing knowledge, to creating value, to producing it. The quality of an individual's knowledge and educational background defines who they are and empowers an organization when harnessed and shared.

2.3 Education meets the metaverse

The concept of the metaverse is not exactly new. It has already appeared in his science fiction works, such as Snow Crash [14], but it only gained some notoriety following the publication of the movie Ready Player One [15], which adapted the concept. The phrase "metaverse" is derived from the prefix "meta," which means transcendence, and the word "universe," which refers to a network of parallel or virtual universes. Neil Stevenson used the phrase "metaverse" in his science fiction book Snow Crash (1992). The book's main character adopts a variety of digital personas as an escape from grief in the real world [14].

Since then, virtual collective spaces, international replication, embodied web/spatial internet, diverse innovative technologies, a class of internet software and social forms have integrated post-reality universes, persistent and chronic multi-users. The metaverse described by Cross and his colleagues in [1] is his 3D virtual environment, where individuals perform their daily tasks and manage their financial affairs through avatars that accurately represent themselves. According to [16], "A metaverse approach to a world where digital and fact meet and co-evolve, where social, financial and cultural sports end and cost."

These definitions show that instead of the real world following the virtual world, as the metaverse argues, the real world follows them, creating an ecosystem that connects the two (physical and virtual). Knox [17] states that the metaverse is "not just a platform to be further developed by corporations, implying the usual limitations of monopolies, but instead a whole new life that is not only now beyond corporate operations. It is flat," he emphasized. As proof of the idea that the metaverse is an ecosystem and underscores its scale as a single company, but free from interference by national entities or governments." In addition to time and implementation experience, Hwang et al. [3] proposed three features: "shared," "continuous," and "distributed" to highlight the potential applications of AR and VR in the metaverse. As a result, the metaverse offers opportunities for immersive experiences, partnerships, and interactions that foster the development of societies by enabling the emergence of "parallel internationals."

A digital twin that enables the creation of virtual representations and styles of the real world. The terms "digital twin," "human with a plethora of virtual abilities," and "physical-digital symbiosis" all refer to the fusion and connection of physical

and digital environments and are used to describe the digital replication of reality increase. An environment that is used synchronously. In addition, Davis et al. [18] developed his five-component metaverse research paradigm as follows: (1) the metaverse itself, (2) people/avatars, (3) technical capabilities of the metaverse, (4) behavior, and (5) results.

The e-learning industry has evolved significantly since the computer internet boom of the late 1990s. Industry observers now argue that the third generation of computers is among us, as the second wave of mobile computing and social media introduced microlearning through short video-based learning calls. The metaverse, a virtual three-dimensional environment that is "always on" and allows social interaction with friends, replaces the static, flat pages, and contacts on your computer. This change has important implications for learning to build features.

The idea of the metaverse in education is likewise no longer original because it has been hotly contested by academics and educators. As an illustration, research by Kemp and Livingstone [19] detailed how to integrate metaverse with a virtual environment termed "second existence" by using control mechanisms to improve the learning process. When focusing on virtuality measurements, the metaverse may be the upcoming location for social interaction and meetings, and he called for proactive education to make use of it for teaching and getting-to-know-you purposes. Avatars that evoke a sense of presence are believed to enable interaction and communication in the three-dimensional virtual environment [20]. A summit to develop a roadmap for the metaverse generation's future also took place in 2006 at the Stanford Research Institute. Researchers from many areas, generation architects, businesspeople, and futurists worked together to assess and estimate an approximate ten-year plan for the future of the internet.

The ability for students to pay attention to their instructions and give elements that would be an issue in a regular classroom are two advantages of the metaverse. Classmates in the metaverse can interact with their instructors and fellow students by using their avatars. This might result in an immersive learning experience that boosts the student's desire to learn. For instance, the use of mixed facts in maintenance presents an interesting overview of aircraft renovation [21]. Academic digital environment programs based on OpenSim and knowledge exchange in the metaverse were studied by González Crespo et al. [22] as free resources.

2.4 The metaverse for education: Building a meaningful learning experience

Technology like XR, when properly built, can enhance studying efficiency, which is difficult to do in any other situation. A few XR properties that can be particularly significant when used in educational environments are as follows:

Immersion: it can give the impression of depth and space; XR gear can make use of stereographic imagery and spatial audio. Customers can view 3D content (such as objects) in their environment from a first-person perspective, giving them the impression that they are in the same space as the content.

Interactivity: XR enables responses to user movements and activities, allowing users to actively interact with virtual surroundings. As such, it is an interactive medium that may activate users' complete bodies and foster creativity and expression.

Invisibility: XR can visualize phenomena like alternate through the years or minute particles that are invisible to the human eye because it employs realistic 3D imaging and combines the digital with the physical.

Together, those traits can support a strong sense of presence, or the sensation of "being there," at a location relevant to your physical location, as well as a strong sense of commercial enterprise, all of which can help enable learning. Additionally, technology can provide a sense of being present in an extraordinary frame, known as digital frame possession, and a sense of being present with other people, known as co-presence. Due to these traits, XR is particularly suitable for constructive getting-to-know aims and techniques, while being less effective for others.

3. Conclusion

To assist the ambitious SDGs objectives implementation and develop future sustainability leaders, higher education institutions have a major duty. The reputation and prestige of a university internationally also heavily depend on sustainability. Higher education shapes adult thinking and is seen as a "changing agent" for sustainable development. Institutions of higher learning must spearhead change and create courses based on sustainable principles.

Growth in computers, artificial intelligence, high-speed communications, and virtualization technologies make the metaverse promising [23, 24]. According to Gartner [25], by 2027, 30% of people will spend two hours of their day working, playing, learning, and socializing in the metaverse. Compared to current educational technology, the existence of the metaverse is a completely new idea in the context of education. As mentioned earlier, the metaverse offers many opportunities and advancements in education. The reality of the existing schooling metaverse can help to some extent in overcoming some barriers and limitations. More importantly, continued interest in the metaverse points to future shaping trends and directions [26]. Therefore, soon, it can be predicted that academics involved in education will actively engage in research on the learning metaverse.

An additional point to be made is that incorporating the metaverse into schooling may bring up several contentious issues (such as addiction, ethics, or security) that require more debate; otherwise, the "metaverse" will be a "*metaworse*." To maximize the benefits of the metaverse's influence on future education, educational scholars should focus more on how to use it to get beyond existing education's drawbacks. As a result, the introduction of the metaverse in education is intriguing and widely predicted.

We expect the number of articles on this topic to grow significantly over the next few years. To expand future research, various potential research subjects of the metaverse in education will be covered as follows:

1. Developing a model or framework for the metaverse for educational purposes. Education is based on the metaverse design and framework, which includes both hardware and software.

2. Applying the laws and morals of the metaverse to schooling. Therefore, it should be urgently necessary to develop and apply tight standards in metaverse-based educational environments.

3. Implementing the metaverse would present teachers and school administrators with both wonderful possibilities and difficult obstacles.

4. Advancing the careers of teachers, as a result, topics such as teacher preparation and professional growth may be significant subjects in metaverse-related educational research.

5. Evaluating the efficiency of instruction and learning across multiple metaverse platforms, other learning settings, and the metaverse. Will students do better in the metaverse than they would in a conventional classroom or via distant learning via screens, for example?

In the last quarter of 2019, a global pandemic erupted and resulted in a complete lockdown all around the world. Humanity was forced to rethink its teaching and learning methods, eyeing the metaverse as a possible and urgent solution to be implemented. As a result, many countries saw an opportunity to enhance online learning and look for much more advanced technology, which triggered VR, AR, and AI. Metaverse erupted into a 3D digital space that reflects the real world through digital agents and allows for interactions among people.

The 2000 millennium conference celebrations unveiled the millennium declaration and eight millennium improvement goals namely "ending extreme poverty and hunger, achieving the highest levels of education, promoting gender equality and women's empowerment, reducing child mortality, improving maternal health, and combating HIV/AIDS, fighting malaria and other diseases, securing the environment, and increasing sustainability and building global environmental partnerships for development." Another criticism of the MDGs is that in some regions, such as Africa, the strong personalities and arrangements of the MDGs have had a negative impact, making their achievements seem to be a failure [6]. Nonetheless, this agreement was a significant step forward since it indicated a shared will on the part of nations to implement several sustainability-related measures and collaborate to find effective solutions. Another criticism of the MDGs is that they have had a negative impact in some regions, such as Africa, making the advancements appear to be failures [6].

The MDGs and SDGs are highly regarded due to the attention and dedication of many nations throughout the world in the sustainable boom. The MDGs target impoverished nations, but the SDGs concentrate on all countries, regardless of their level of development, and have a different point of emphasis shown design (e.g., the SDGs consist of new SDG11 for societies).

With the primary goal of fostering peace and prosperity, the United Nations (UN) and its member states unveiled the 2030 agenda for sustainable development in 2015. These are all summarized in the 17 sustainable development goals known as the SDGs. The goals are based on contemporary human development concepts that emphasize health and education and are based on continued economic growth that guarantees a permanent surplus of all kinds of commodities that can be used to "satisfy" development. Human development aims at human well-being and quality of life when understood in this way.

Universities play a significant role in the formation of future leaders who will support the UN's sustainable development goals (SDGs) in their effective implementation. Although the SDGs are being implemented in a range of various locations, higher education institutions play a significant role in cultivating a mentality that makes the SDGs' guiding principles more well-known. Building sustainability is fueled by education, one of the most important communication instruments and the cornerstone of the "sustainable attitude." "A systemic approach to knowing, one which

goes beyond technical knowledge and even understands the principles of a healthy environment and a functional society," is included in this idea.

This is so because sustainability balances the three elements of the environment, society, and economy.

Acknowledgements

We would like to express our special thanks to Ms. Sara Debeuc for reaching out. We thank IntechOpen for giving us this excellent opportunity to be part of this splendid work.

Conflict of interest

The others declare no conflict of interest.

Author details

Nehme Azoury* and Cynthia Hajj
Holy Spirit University of Kaslik (USEK), Kaslik, Lebanon

*Address all correspondence to: nehmeazoury@usek.edu.lb

References

[1] Kye B, Han N, Kim E, Park Y, Jo S. Educational applications of metaverse: Possibilities and limitations. Journal of Educational Evaluation for Health Professions. 2021;**18**:4

[2] Suzuki S. Zen mind, beginner's mind. Boulder, Colorado: Shambhala Publications; 2020

[3] Hwang GJ, Chien SY. Definition, roles, and potential research issues of the metaverse in education: An artificial intelligence perspective. Computers and Education: Artificial Intelligence. 2022;**100082**:1

[4] United Nations. Report on Indicators for Promoting and Monitoring the Implementation of Human Rights. 2008. Available from: https://www2.ohchr.org/english/issues/indicators/docs/HRI.MC.2008.3_en.pdf. [Accessed: 28 Dec 2022]

[5] Fukuda-Parr S. From the millennium development goals to the sustainable development goals: Shifts in purpose, concept, and politics of global goal setting for development. Gender and Development. 2016;**24**(1):43-52

[6] Easterly W. Can the west save Africa? Journal of Economic Literature. 2009;**47**(2):373-447

[7] Brown LR. Plan B: Building a new future: A wartime mobilization. Plan B 2.0: Rescuing a Planet Under Stress and a Civilization in Trouble. New York, NY: W.W. Norton & Company; 2006. pp. 249-266

[8] ESCAP, U. Economic and social survey of Asia and the Pacific 2015 part I: Making growth more inclusive for sustainable development. In: Repository Home. Economic and Social Survey of Asia and the Pacific. 2015. Available from: https://repository.unescap.org/handle/20.500.12870/1646. [Accessed: 28 Dec 2022]

[9] Shields R. The sustainability of international higher education: Student mobility and global climate change. Journal of Cleaner Production. 2019;**217**:594-602

[10] Gatti L, Ulrich M, Seele P. Education for sustainable development through business simulation games: An exploratory study of sustainability gamification and its effects on students' learning outcomes. Journal of Cleaner Production. 2019;**207**:667-678

[11] Fien J. Advancing sustainability in higher education: Issues and opportunities for research. Higher Education Policy. 2002;**15**(2):143-152

[12] Leal Filho W, Wu YCJ, Brandli LL, Avila LV, Azeiteiro UM, Caeiro S, et al. Identifying and overcoming obstacles to the implementation of sustainable development at universities. Journal of Integrative Environmental Sciences. 2017;**14**(1):93-108

[13] Wuelser G, Pohl C. How researchers frame scientific contributions to sustainable development: A typology based on grounded theory. Sustainability Science. 2016;**11**(5):789-800

[14] Stephenson N. Snow Crash: A Novel. New York City, United States (US): Spectra; 2003

[15] Cline E. Ready Player One. New York City, United States (US): Ballantine Books; 2011

[16] Kai Liao Y, Wu WY, Dao TC, Ngoc Luu TM. The influence of emotional

intelligence and cultural adaptability on cross-cultural adjustment and performance with the mediating effect of cross-cultural competence: A study of expatriates in Taiwan. Sustainability. 2021;**13**(6):3374

[17] Knox R. A Historical Relation of the Island Ceylon in the East Indies. London, United Kingdome (UK): DigiCat; 2022

[18] Davis A, Murphy J, Owens D, Khazanchi D, Zigurs I. Avatars, people, and virtual worlds: Foundations for research in metaverses. Journal of the Association for Information Systems. 2009;**10**(2):1

[19] Kemp J, Livingstone D. Putting a second life "metaverse" skin on learning management systems. In: Proceedings of the Second Life Education Workshop at the Second Life Community Convention. Vol. 20. CA, San Francisco: The University of Paisley; 2006

[20] Schlemmer E, Moretti G, Backes L. Multimodal and hybrid sharing spaces: Hypothesis and challenges for learning. Qwerty-Open and Interdisciplinary Journal of Technology, Culture and Education. 2015;**10**(2):78-91

[21] Siyaev A, Jo GS. Towards aircraft maintenance metaverse using speech interactions with virtual objects in mixed reality. Sensors. 2021;**21**(6):2066

[22] Crespo RG, Escobar RF, Aguilar LJ, Velazco S, Sanz AGC. Use of ARIMA mathematical analysis to model the implementation of expert system courses by means of free software OpenSim and Sloodle platforms in virtual university campuses. Expert Systems with Applications. 2013;**40**(18):7381-7390

[23] Park SM, Kim YG. A Metaverse: Taxonomy, components, applications, and open challenges. Ieee Access. 2022;**10**:4209-4251

[24] Thomason J. Metaverse, token economies, and chronic diseases. Global Health Journal. 2022;6(3):164-167

[25] Gartner. Predicts 2022: 4 Technology Bets for Building the Digital Future. 2022 https://www.businesswire.com/news/home/20220207005085/en [Accessed: August 6, 2022]

[26] Zhang X, Chen Y, Hu L, Wang Y. The metaverse in education: Definition, framework, features, potential applications, challenges, and future research topics. Frontiers in Psychology. 2022;**13**:1-15

Chapter 5

Perspective Chapter: Communication as an Essential Strategy in the Success of the Teaching-Learning Process

Ana Catarina Baptista and Susana Rodrigues

Abstract

There is a close and important relationship between communication and the teaching-learning process, transversal to the modalities of face-to-face and remote teaching. The effectiveness of communication in the classroom depends on the adequate use of the voice by the teacher. The use of this pedagogical strategy to transmit knowledge to their students' places teachers among the professional groups that are at greater risk of developing voice disorders throughout their professional lives. In this chapter, we share some strategies and resources to optimize the communicative skills of teachers, focusing on voice strategies.

Keywords: communication, vocal health, professors, higher education, voice strategies

1. Introduction

From early childhood, through the elderly stage of life, human beings need to acquire efficient and effective communication processes with individuals in all contexts of life [1].

Communication is the mother of all skills in all contexts of life. In an academic context, communication ability is crucial to achieving success. Choosing the appropriate channel, the right voice tone, and melody, the adequate content with clear and objective information is critical to how that message will be received and understood.

In recent years, higher education institutions have been concerned with improving the academic qualification profile of their professors. This demand for excellence, especially for university professors, has been linked to the privilege of their research and innovation projects. Although, these approaches lead to a misconception that to be a good university professor, it is enough to be a good researcher. Therefore, the importance of specific academic skills, such as communication skills, tends to be ignored in higher education.

Communicative processes have fundamental importance and support professor-student discursive interactions contribute directly to the teaching-learning process [2].

In this chapter, we intend to enhance the importance of communication as an essential strategy in the success of the teaching and learning processes highlighting the role of the voice in these contexts.

2. Communication and its importance in professor-student relationship

Communication can be defined as the act by which a person transmits or receives from another person information about knowledge, needs, desires, and perceptions among others [3].

The communication process presupposes the sharing of information between at least two actors: the sender, who encodes and transmits the message, and the receiver, who decodes and receives the message. Also, important is that both master the same linguist code to generate understanding. An effective communicator must use not only verbal communication, in its oral and/or written format, but also non-verbal communication, such as gestures, facial expressions, and body movements [4]. Providing feedback is also crucial for communication efficiency, whether verbal or non-verbal [5].

When individuals can implement effective communication processes, they will be able to contribute significantly to performing well in their schoolwork, studies, job duties, achieving desired goals, enhancing personality traits, and bringing about improvements in one's overall standards of living [1].

From the beginning of any child's academic life, professors play a key role, not only in the academic training of their students, but also in the development of motivation to learn [6].

The communicative act, far from being a simple act, is complex and interacts with a lot of variables that can be decisively influenced. The communication process occurs in a large variety of situations, such as exchanging information, presenting ideas, clarifying, giving instructions, understanding, working cooperatively with different communicative partners, expressing feelings, motivating, inspiring, and communicating decisions. If we think about the professor's professional context, all these situations are part of his daily basis life. The classrooms are spaces of communication. The words and the way they are said, guide interactions and allow students' appropriation of meanings [2].

Communicative competence refers to mastering the skills necessary to ensure the transmission and reception of the flow of messages, with control of two processes: speaking and listening [7]. During the teaching-learning process, it´s crucial to keep in mind that there is no absolutization of ignorance, nor absolutization of knowledge. Nobody knows everything, just as nobody ignores everything. Knowledge starts with the awareness of knowing a little [8].

University professors can be excellent and effective communicators. They are used to work collaboratively with different kinds of interlocutors, students of different ages and socio-cultural backgrounds, scientists, professors of different areas of experts, policymakers, and so on. They also used to attend conferences having to present their work with clarity and confidence. So, it is undeniable that communication is a fundamental part of a professor's life. Likewise, it is undeniable that it is the communication with their students that constitutes the greatest challenge in the teacher's professional life since it is the one that most impacts the quality and effectiveness of their work. Yet, when professors engage with students, they can face barriers to getting their message across and can often find their messages hard to transfer

effectively. University professors are the only professors that are not trained in their academic education with pedagogical training. The proficiency of pedagogical skills has been a deficit in university professors' education, regardless of professionalism in teaching. Unfortunately, some university professors do not recognize or minimize the importance of pedagogical skills for professional performance.

2.1 Barriers to communication in classrooms

Professors have an increasingly challenging job when communicating effectively with classrooms with numerous students that may contain students who come from varied sociocultural backgrounds.

As we have seen so far, communicating is not a one-way street. It takes at least two people to talk. Someone is speaking and the other one is listening. The efficacy of communication in classrooms should be determined by how closely the student's understanding matches the intent of the professor. Most misunderstandings and difficulties in the communication process between professors and students can result in demotivation, academic failure, and early school leaving.

Some of the frequent communication barriers usually described are listed below:

1. Lack of ease and spontaneity caused by social conventions or moral pressures;

2. Difficulty expressing clearly, simply, and concisely certain ideas;

3. Inadequacy of the language to the sociocultural universe of the interlocutor;

4. Use of unknown terms to the receiver (e.g., loanwords) and abbreviations and acronyms;

5. Estrangement and lack of interest manifested concerning the message received;

6. Lack of regard for the values of the interlocutor—political, cultural, social, religious, and ethnic, among others;

7. Use of an aggressive and provocative voice tone with the intention of frightening the interlocutor;

8. Manipulation of the interlocutor to lead him to question the validity of what you think, feel and say;

9. Imposition of ideas, experiences, and options, not admitting any openness to debate;

10. Use of abstract and exaggerated technique language, to make the receiver inferior.

Other constraints that prejudice efficient communication are preconceived ideas; lack of motivation and interest; disrespectful behaviors; source credibility; channel complexity; organizational climate; and personal bias and conflicts. Lack of motivation in classes is often pointed out by students as a key factor for their demotivation [9].

In a busy world with hundreds of stimuli, requests, solicitations, notifications one click away, with concentration-time dropping dramatically, it is harder to maintain motivation and interest in long hours of expositive classes. We acknowledge that professors are competing with unfair conditions. It is a challenge and an opportunity as well.

At this point, we would like to emphasize a critical constraint not mentioned until now: the generation gap. The generational gap is one of the biggest reasons for the intergenerational disconnect. Much of their conflict is rooted in ways they differ in communication methods styles and how big the gap between the generations is [10].

Communication has been around for centuries. The first cave drawings found, were a way for early humans to register and share information. Over the centuries humans evolved, and so did their communication styles. Even though written communication, language is always evolving. Whether that is the spoken word or written works, meanings and interpretations will change as humans change.

Professors and students have a generation gap, more accentuated in primary and secondary education but also observed in higher education. A critical barrier to cross-generational communication is negative perceptions of each other [10]. Unfortunately, each generation cannot resist putting labels and stereotypes on each generation: baby boomers, millennials, and Gen X.

Above all the differences, there is a communication gap across generations which must be considered, especially by professors. We live in a global, connected, and digital world, and students who arrived at higher education are born in the twenty-first century, digitally native-born. Connected almost the entire day, between laptops, desktops, smartphones, and tablets, students engage and communicate using multiple devices. Inevitably, this fact has implications for the way these new generations consume information, formulate knowledge, and communicate what they think and what they know.

Most of the professors in higher education are from the baby boomer generation, who grew up with face-to-face communications and who struggle to fully embrace the digital communication revolution at work. On the other hand, its students are mainly belonging to Gen Z, who have grown up with access to screens and the internet from a young age, preferring written communications over in-person ones, and expecting a fast response to their messages.

In a study carried out with the aim of evaluating the communication skills of professors, and their communicative attitudes [11] was demonstrated that professors valued more technical competence, material preparation, class structuring, and organization. However, the students valued other aspects such as the "nice attitude" of the professors and communication effectiveness. By communication effectiveness, the students pointed out examples such as the use of simple and attractive language; the preparation and organization of classes, commitment to student learning, use of practical examples during class, and the quality of how the classes were taught.

Usually, students recognize their professors as experts in their scientific field and do not question their academic knowledge about the syllabus contents of the disciplines they teach. What students often question is the ability of their professors to communicate the most complex content clearly and simply, which could negatively influence their academic achievement.

It should be noted that the professor's communicative ability, from the interactional point of view, also has been little addressed in most research. The most frequent approach aims this population still emphasizes the professor's voice from the clinical point of view, such as the characterization of their profile and vocal behavior [12–15].

Taking that into consideration, we assume that it is crucial to bring the quality and excellence of the teaching-learning process and the training of professors to their full potential, considering the important weight of training professors with pedagogical skills.

2.2 Communication as an opportunity to improve academic achievement

Communication, critical thinking, creativity, and collaboration are frequently mentioned as the most important competencies for twenty-first century students. Effective communication begins with mutual respect, communication that inspires, and encourages others to do their best.

As university professors highly engaged with the importance of communication that impacts and empowers students along with their learning process, we believe that education is the energy that transmits to new generations the passion and commitment to achieve a better, inclusive, and fair world in all the social, political, economic sectors of the society. To accomplish that, we believe professors must embrace open, clear, and honest communication with their students in a relation of true reciprocity. As communicators, professors are contagious in different ways: nonverbally, verbally, and emotionally.

In the classroom context, there are some strategies to optimize communication that can be able to positively contaminate the audience.

1. *Organize the information*: use an "ODC model" (Opening – Development – Closing). Group information into "blocks" can facilitate motivation. The content of the class must be objective and at the same time transmitted with emotion.

2. *Periodically break the routine*: encourage student participation; share a real story; make analogies; bring appealing elements to communication.

3. *Engage students*: allow them to bring explanatory examples, share reflections and experiences, suggest the inclusion of subjects, work cooperatively on tangible objectives, communicate, and evaluate the performance of colleagues.

4. *Making updates*: marking the rhythm of the class, and making summaries help keep students frequently updated, which contributes to maintaining pace and focus.

5. *Use appealing features*: more images, less text, video, and other online resources.

A recent book on "conscious communication" [7] listed and characterized the most relevant factors for successful communication: authenticity; double focus; respect for the rules; self-esteem expression; and problem-solving attitude.

Due to its relevance to the teaching-learning process, we would like to highlight some of the decisive attitudes that allow a better understanding between professors and students in the teaching-learning process (**Figure 1**).

In addition to the aspects mentioned above, giving accurate feedback is a renowned factor to be acknowledged in effective communication processes with a significant impact on the learning process. Feedback is one of the most effective teaching and learning strategies and has an immediate impact on learning progress [5].

Positive attitudes to promote communication in classrooms	
Attitude	Relevance of attitude in the classroom
Gentle attitude and a friendly tone of voice	encourages students to communicate better, to question and to share viewpoints and doubts. We strongly believe that kindness generates kindness and when students feel that they are open to share freely and without strings attached, a safe and positive communication environment happens.
Active listening	some people defend that the biggest communication problem is that we don´t listen to understand, but to reply. Giving time and feedback is vital to move forward the communication process.
Non-verbal communication	align with the content, adds content to all students in the classroom, promoting attention and reinforcing verbal communication.
Confidence	in a balanced proportion, without being overbearing or hostile.
Empathy	respect and understand students, without judgments.
Clarity	the teaching-learning process must be a co-responsible process. It can make a difference, asking "Am I being clear?" instead of "Do you understand?".

Figure 1.
Examples of some positive attitudes to promote communication in classrooms.

Feedback is a compelling influence on student achievement. When professors are open to what students know, what they understand, where they make errors, and when they have misconceptions when they are not engaged; then, teaching and learning can be synchronized and powerful [5]. Effective feedback encourages reflection and allows the students to think about their learning strategies so they can adjust to achieve progress and success in their learning process.

Some strategies are crucial to give feedback correctly in the classroom context, such as:

1. Help students to understand the assessment of their learning process;

2. Allow time to discuss feedback with students on an individual or small group basis with regularity;

3. Give feedback as close as possible to the assessment task;

4. Be specific and explicit about feedback, providing examples and real situations;

5. Encourage students to ask questions about their feedback;

6. Encourage them to note down their questions;

7. Guarantee that the students understand what is being discussed;

8. Ask the students what they think they need to improve on their academic goals;

9. Share your advice about future steps for academic improvement;

10. Promote student´s discussions with you and/or with their peers;

Although feedback is considered one of the most powerful influences on teaching-learning process, it is important to assume that its impact can be either positive or negative. In a study that provided a conceptual analysis of feedback and reviews the evidence related to its impact on learning and achievement, was found evidence shows that although feedback is among the major influences, the type of feedback and the way it is given can be differentially effective, suggesting some ways in which feedback can be used to enhance its effectiveness in classrooms [16].

3. Voice strategies to improve professor's communication

As has been presented so far, appropriate communication in the classroom is essential for the success of the teaching-learning process. Among the different forms of communication that professors can use, the oral exposition of syllabus contents is the most used pedagogical strategy in an educational context [17]. Clearly conveying information, presenting it in a way that keeps students' attention and motivation, as well as answering any questions that may arise, are aspects that concern the professor's duties. It is, therefore, clear that knowledge about the contents is naturally very important, but it is also known that the way in which this knowledge is transmitted becomes crucial. In this sense, the effectiveness of communication in the classroom necessarily involves, among other aspects, the proper use of the voice by the professor. It is essential, therefore, that the professor's voice is perceptible, motivating, assertive, and effective so that it is possible to capture and maintain the student's attention. The need to keep students interested and attentive for extended periods of time implies the dynamic use of the voice, with variations in volume, diction, and pauses, among others [14]. Monotonous voices, without expressiveness, are weak and/or produced with tension and effort can jeopardize the effectiveness of communication in the classroom [18].

According to Moura [14], the professor's voice is generically characterized by a strong intensity, requiring a lot of resistance and dynamism, and it is frequent to observe tension associated with vocal production, interfering with various characteristics of the voice. Furthermore, during professional activities, professors are also subject to contextual/environmental situations that may interfere with their health

and vocal quality, such as poor classroom acoustics; temperature variations; noise; and long periods of classes; with little time to rest and recover the voice; stress.

In a study that analyzed the verbal and non-verbal expressive resources used by higher education professors, it was observed that the parameters related to the frequency and vocal intensity were the factors that most influenced the professors' expressiveness, reinforcing that these aspects can have an influence in the teaching-learning process [2]. Other studies also show that aspects, such as voice quality and intensity, speech rate, and the use of pauses are valued by students [19–21].

The importance that the voice assumes, not only as a pedagogical strategy but also as an important element in the relationship with the quality of life of professors, has been the subject of study over the years. However, there are some studies that show that these professionals have difficulty identifying their vocal characteristics, which can lead to the adoption of less careful behavior with their voice and, consequently, makes professors not seek help in case of difficulties [15, 22, 23]. In this sense, it is essential that professors acquire knowledge about their voice so that they can recognize its qualities and limits and, thus, make the best use of their voice for the development of their pedagogical activities [18, 24, 25].

Based on the previous assumptions, a vocal health program was developed and implemented for professors at the University of Algarve, in Portugal [26]. This program, very focused on aspects of vocal health, aimed to raise awareness among professors of the importance of good vocal health and the prevention of potential vocal pathologies but also focused on optimizing professors' vocal skills.

Since the voice is an important working tool for professors, it is essential to take care of it. Thus, regardless of the teaching modality (face-to-face or remotely), it is very important to prepare the moments of more intense use of the voice, then maintain its use in a healthy, perceptible, and motivating way, and, later, recover from the period of use intense voice. An essential orientation that cuts across different moments (preparation, maintenance, and vocal recovery) is the consumption of water as a form of hydration (**Figure 2**). In a recent systematic review of literature, it was concluded that hydration is the easiest and most economical solution to improve vocal quality, therefore supporting the inclusion of hydration in vocal hygiene programs [27].

The analogy between the professor and the high-competition athlete is often used to illustrate the fact that both use their work tools intensively: the professor, the voice;

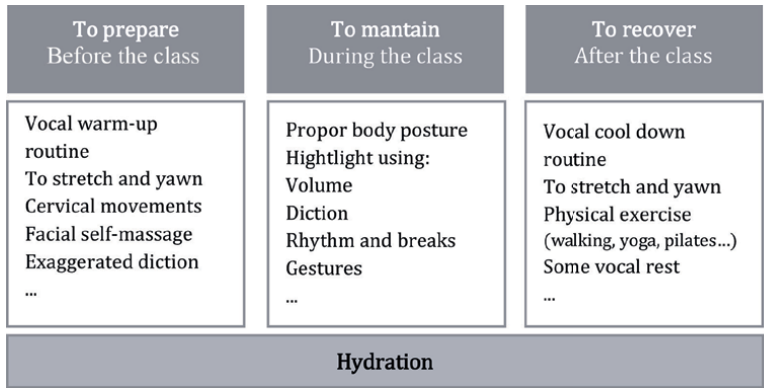

Figure 2.
Examples of strategies for optimizing professor's communication skills, before, during, and after class.

the athlete, the muscles of the body. However, contrary to the athlete, the professor does not, as a rule, have specific training/preparation for the use of the voice for communication in the classroom.

Before a class, it is important to prepare voice and body. On the one hand, hydration should be started before the period of more intense use of the voice and, on the other hand, somebody and vocal relaxation exercises, as suggested in (**Figure 2**). Activating the structures responsible for voice production, as well as performing some warm-up vocal exercises, is extremely important. It is suggested that, in an initial phase, even in the absence of vocal pathology, the professor can be guided by a speech therapist or vocal coach.

During the class, it is important to adopt a proper body posture, not only because it is essential to promote good breathing, but also because it supports and structures the voice [14]. To get the students' attention, the professor can resort to different strategies without calling into question communication, in general, and his voice, in particular. When communication takes place through writing, the use, for example, of italics, bold, and underlining, are resources used to highlight the most important ideas and, thus, draw attention to the fact that you are reading, in oral communication, there are also strategies that may have the same function. Turning up the volume when you are talking is an effective and widely used strategy when you want to capture attention. However, this may not be the only way to use voice volume as an ally in classroom communication. In situations where, for example, the noise in the room is already high, if you reduce the volume of your voice, you can also achieve the effect of drawing attention to yourself and/or to what is being said, due to the contrast that occurs.

Another extremely important aspect is the way the teacher articulates the words. A more closed diction is, consequently, less clear and this could condition the way the message reaches the student, even leading to him losing attention and interest in what is being said. Thus, and in general, the professor should be concerned with having clear and precise diction, and in a more particular way, he can even use a more exaggerated articulation, as a strategy to draw attention to aspects that he wants to highlight.

Rhythm is another feature that should be used to optimize communicative skills in the classroom. Varying the pace, and minimizing the monotonous effect of the speech, can be very useful in the classroom. The variation in rhythm can be associated not only with the increase or decrease in the speed of what is said but, for example, resorting to the syllabic segmentation of words or small expressions to be highlighted, which will certainly attract the students' attention. Pauses are also associated with rhythm. In communication, silence also conveys information, it gives time to those who are sharing an idea but above all to those who are receiving the message, to reflect. Using silent pauses strategically, before or after the words, expressions, and/or ideas you want to emphasize, is also a good example of optimizing communication.

Parallel to the examples of strategies provided above (**Figure 2**), the professor can also use gestures, and facial and body expressions to reinforce and complement his communication in the classroom. However, it is important not to forget that the gestures must be coherent and consistent with what is being said, to promote communication, and not make it less clear.

Even during the class, less demanding pedagogical activities from the vocal point of view can be carried out, namely, watching videos, group work, and exposition of preparatory contents by students, among others, which will allow the professor to have some moments of rest vocal.

Whenever possible, the professor can adopt a position closer to the students, because by reducing the distance to the interlocutor, the need to project the voice is reduced and it will be easier to keep the audience more attentive and involved [14].

At the end of the class, it is important, just like a top-level athlete, to vocal cool down, restore and recover your voice (vocal cool down exercises are similar to vocal warm-up exercises, differing only in intensity and amplitude, which should be smaller [14]. As such, in addition to some appropriate vocal exercises, it is important to do some vocal rest, with quieter and more relaxed moments, and may associate some physical activity, such as walking or others that meet the professor's personal tastes. Stretching and yawning are small gestures that have a great impact on releasing accumulated tensions, often reported by professionals who use their voice professionally, such as teachers, and which can be used either as a form of preparation or as a way of recovering from a period of intense use of the voice.

4. Conclusions

This chapter addresses general aspects of communication and how they are important in the relationship between professors and students, with implications for the teaching-learning process. Communication barriers were identified. It is essential to acknowledge and be aware of the aspects that can interfere with the communicative process, as this is the only way these barriers can be overcome. A look at how communication can enhance academic development was also presented, with a presentation of some strategies that can be adopted. To end this chapter, some basic, but essential notions, are presented about vocal aspects that can improve professors' communication in the classroom.

We believe that in-depth knowledge of the main communicative difficulties experienced by teachers and students during the teaching-learning process is the best way for us to outline effective action plans that promote communicative processes in the classroom, to facilitate pathways of participatory, motivating, and transforming learning. The success of students is the success of professors and the success of educational institutions. It is necessary to work cooperatively from the beginning and raise awareness among the decision-making elements of the institutions to invest in the pedagogical training of their professor staff as a reasonable response to mitigating failure and school dropout of the students.

Programs designed for university professors with a special focus on communication and voice skills such as the one that we have enhanced in this chapter should be valued and disseminated across higher education institutions.

The approach to communication needs to be unified in higher education institutions, in a concise strategy to provide the best practices of streamlined, effective, and empathetic communication.

Conflict of interest

The authors declare no conflict of interest.

Author details

Ana Catarina Baptista[1,2]* and Susana Rodrigues[1,2]

1 University of Algarve, Faro, Portugal

2 Centro de Linguística da Universidade de Lisboa (CLUL) (UIDB/00214/2020), Lisboa, Portugal

*Address all correspondence to: acjesus@ualg.pt

IntechOpen

References

[1] Kapur R. Implementing Effective Communication Processes: Indispensable in Promoting Enrichment of Living Conditions of Individuals. 2022. Available from: https://www.researchgate.net/publication/366390667_Implementing_Assessment_Strategies_Vital_in_Identifying_the_Academic_Performance_of_Students on 26 of November 2022 ?

[2] Barbosa N, Cavalcanti ES, Alves E, Neves L, Chaves TA, et al. A expressividade do professor universitário como fator cognitivo no ensino-aprendizagem. Ciência & Cognição. 2009;**14**(1):75-102

[3] Sociedade Portuguesa de Terapia da Fala. Dicionário terminológico de terapia da fala. Lisboa: Papa-Letras; 2020

[4] Rodrigues S, Baptista AC, Nascimento T, Galinha V. Training Future Health Professionals in Communication Skills. In: Handbook of Research on Improving Allied Health Professions Education. IGI Global. 2022. pp. 35-50. DOI: 10.4018/978-1-7998-9578-7.ch003

[5] Hattie J, Clarke S. Visible Learning: Feedback. 2019. Available from: https://search.ebscohost.com/login.aspx?direct=true&db=edsebk&AN=1877800&site=eds-live

[6] Dibiase R, Miller PM. Predicting feelings of cognitive competence in head start preschoolers. Journal of Genetic Psychology. 2012;**173**(1):23-40

[7] Behlau M, Babara M. Comunicação Consciente: O Que Comunico Quando me Comunico. Rio de Janeiro, Brasil: Thieme Revinter; 2022. Available from: https://search.ebscohost.com/login.aspx?direct=true&db=edsebk&AN=3368216&site=eds-live

[8] de Filho SM, de Lima S. Perspectivas das ideias freireanas no ensino-aprendizagem de línguas. Anhangabaú, Brasil: Paco Editoria; 2022. Available from: https://search.ebscohost.com/login.aspx?direct=true&db=edsebk&AN=3365982&site=eds-live

[9] Barieva K, Kireeva Z, Zhou N, Kadi S. The Overcoming the Communication Barriers of Students as means of a Personalization of Education. Journal of Social Studies Education Research [Internet]. Oct 2018;**9**(3):398-409. [cited 2022 Nov 13] Available from: https://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,shib&db=edb&AN=131890971&lang=pt-pt&site=eds-live&scope=site

[10] Downs H. Bridging the Gap: How the Generations Communicate. Concordia Journal of Communication Research. 2019;**6**(1):1-23. Available from: https://digitalcommons.csp.edu/comjournal/vol6/iss1/6/

[11] Rego A. Eficácia Comunicacional na Docência Universitária: A Perspectiva de Estudantes e Professores. Psicologia: Teoria e Pesquisa. 2001;**17**(3):275-284. Available from: https://doaj.org/article/83ae7e8ac6d748568bd4f5d7cf219259

[12] Batista APF, da Teixeira AJ, de Oliveira CA. Fadiga vocal nos professores do primeiro ciclo do ensino básico. Aveiro: Universidade de Aveiro; 2010. Available from: http://hdl.handle.net/10773/2173

[13] Choi-Cardim K, Behlau M, Zambon F. Vocal symptoms and profile of teachers in a vocal health program. Review in CEFAC. 2010;**12**(5):811-819

[14] Moura I. O Poder Secreto da Voz. Porto: Porto Editora; 2018

[15] de Lima-Silva MF, Ferreira LP, de Oliveira IB, de Silva MA, ACAM G. Distúrbio de voz em professores: autorreferência, avaliação perceptiva da voz e das pregas vocais. Revista da Sociedade Brasileira de Fonoaudiologia. 2012;**17**(4):391-397

[16] Hattie J, Timperley H. The Power of Feedback. Review in Education Research. 2007;**77**(1):81-112. DOI: 10.3102/003465430298487

[17] Servilha EAM, da Monteiro AP. Estratégias para obter a atenção discente no contexto universitário: o papel da voz do professor. Distúrbios da Comunicação. 2007;**19**(2):225-235. Available from: http://search.bvsalud.org/portal/resource/en/lil-505396

[18] Servilha EAM, da Costa AT. Conhecimento vocal e a Importância da voz como recurso pedagógico na perspectiva de professores universitários. Revista CEFAC. 2015;**17**(1):13-26

[19] de Azevedo LL, Martins PC, Mortimer EF, et al. Recursos de Expressividade Usados por uma Professora Universitária. Distúrbios da Comunicação. 2014;**26**(4):777-789

[20] Ferreira LP, Arruda AF, Marquezin DMSS. Expressividade oral de professoras: análise de recursos vocais. Distúrbios da Comunicação. 2012;**24**(2):223-227. Available from: http://revistas.pucsp.br/index.php/dic/article/view/11974/8672

[21] Romano CC, Alves LA, et al. A expressividade do docente universitário durante sua atuação na sala de aula: Análise dos recursos verbais utilizados e suas implicações para a enfermagem. Rev Lat Am Enfermagem. 2011;**19**(5):1188-1196

[22] Fabrício MZ, Kasama ST, Martinez EZ. Qualidade de vida relacionada à voz de professores universitários. Revista CEFAC. 2009;**12**(2):280-287

[23] de Morais EP, Azevedo RR, Chiari BM. Correlação entre voz, autoavaliação vocal e qualidade de vida em voz de professoras. Revista CEFAC. 2012;**14**(5):892-900

[24] Ferreira LP, Carolina A, Fernandes N. Professores universitários: descrição de características vocais e posturais. Distúrbios da Comunicação. 2011;**23**(1):43-49

[25] Servilha EAM, de Roccon P. Relação entre voz e qualidade de vida em professores universitários. Revista CEFAC. 2009;**11**(3):440-448

[26] Rodrigues S, Baptista AC. Programa de saúde vocal para professores do ensino superior. Revista Docência do Ensino Superior. 2021;**11**:1-23

[27] Alves M, Krüger E, Pillay B, van Lierde K, van der Linde J. The effect of hydration on voice quality in adults: A systematic review. Journal of Voice. 2019;**33**(1):125.e13-125.e28. DOI: 10.1016/j.jvoice.2017.10.001

Chapter 6

Institutional Policies and Initiatives for the Internationalization of HE: A Case of Southeast Asia and Pakistan

Hazri Jamil and Khadija Jaffar

Abstract

The internationalization of higher education is an important agenda explored and undertaken by public and private universities to improve the quality of education as well as the skills and competencies of graduates. There is great potential for cross-border engagement and internationalization efforts in the context of higher education in ASEAN countries and Pakistan. In this case study, the discussion on strategies and initiatives to embrace higher education at the university level is not limited to the goals and needs of higher education institutions but is also guided by the views and priorities of the country's economic and strategic development. This has implications for how individual universities design their policies and implement initiatives at the institutional level and their strategic direction for internationalization.

Keywords: internationalization, higher education, institutional policy, university, ASEAN

1. Introduction

The process of modernization of the education system is complex and multi-faceted, and it is an important part of the social and economic changes in a society and country. As a result, the international community prioritizes the role and importance of education in the context of social and economic development involving the transition from one level of development to another [1–3]. The phenomenon of internationalization occurs in the context of higher education through the flow of students who go to study in other countries [4], and the competition to attract talent and quality students as well as the importance to economic development has contributed to policy changes and initiatives at the level higher education institutions for internationalization goals. It is a response to globalization of societies, economy, and labor markets and a "cause for the further globalization of higher education" ([5], p. 141). This is what Appadurai [6] calls a global cultural trend that affects the character and image of the country in the context of contemporary globalization, including higher education.

In this age of global interdependence, the recognition of higher qualifications has become extremely important. The strong bonds that have been glowed by globalization in the political, social, and economic spheres have increased people's mobility and the flexibility of ideas in higher education. The new world of higher education is also characterized by competition for prestige, talent, and resources on both national and global scales. National and international rankings are driving some universities to prioritize policies and practices that help them rise in the rankings [7, 8]. Therefore, higher education institutions are quickly changing in response to new geopolitical and economic commitments to go global [9]. Hence, international actions or initiatives such as international education, international programs, and "study abroad" are commonly associated with the internationalization of higher education [10].

The internationalization of higher education has changed over the past 50 years from a minor activity to a crucial component of the reform agenda [11]. To meet the demands of their educational modernization and global challenges, developing countries have implemented direct and indirect educational internationalization policies in some cases. Brazil, Russia, India, China, and South Africa (BRICS) are examples in which they all advocate for the internationalization and globalization of higher education policies in order to provide stronger talent support for joint science and technology innovation [12].

In 1980s, the term "internationalization" applied to higher education, and scientists described it as "one of the laws of motion that push institutions of higher education forward" ([13], p. 5; [14], p. xv), "one of the important characteristics of modern universities" ([15], p. 1; [14], p. xv), and "Pressure that can be no teacher knows" ([14], p. xv). Internationalization is a strategy for the development of higher educational institutions, which provides significant changes in the scientific and educational activities and the internal life of a higher education institution, aimed at strengthening the international component, integrating into the global educational space, and developing cooperation in universities with partners from different countries [16]. The growing interest in, and debate about, internationalization has resulted in new insights into the content of, and approaches to, internationalizing higher education. Internationalization goals are constantly evolving, ranging from educating global citizens to increasing research capacity to enhancing institutional prestige. New forms of internationalization such as branch campuses abroad, distance learning programs with global reach, international education hubs and networks now complement traditional initiatives such as student and staff mobility, curriculum changes, and international institutional links for teaching and research, and include access to learning and collaboration through online platforms are among the forms and initiatives of internationalization of higher education. Higher education internationalization is a dynamic process that is constantly shaped and reshaped by the national and international contexts in which it occurs. The purposes, goals, meanings, and strategies of internationalization change as these contexts change.

Regardless of contextual differences within and between countries, nearly all higher education institutions around the world are involved in international activities and seek to engage globally, which is now considered part of the definition of quality education and research. However, the success of various stages of higher education internationalization is also heavily dependent on institutions developing and effectively implementing sound policies and initiatives. This case study discusses good practices adopted by higher education institutions in some Asian countries with additional discussion on Pakistan HE to route the internalization of Higher Education.

1.1 Singapore

Singapore is a partner of the Regional Comprehensive Economic Partnership (RCEP), which is the largest free trade agreement in the world. It is a signing mark of the completion of the world's largest free trade zone, with the most diverse membership. This partnership creates a 15-country open market and implements regional economic integration by lowering tariff and non-tariff barriers. RCEP is primarily concerned with economic and trade cooperation, but its significance extends beyond that [17]. RCEP considers not only the economy's leading role, but also the roles of culture, education, science, and technology. Educational cooperation is significant in the field of RCEP strategic cooperation. This includes collaboration in higher education which has long-term cooperation among the RCEP countries such as Japan, Singapore, South Korea, Australia, New Zealand, and others and has also sent many international students to each other [18].

In a journey of internationalization, recommendations were made for new degree pathways with "strong theoretical foundations, integration of soft skills like communication and cross-cultural skills into curriculum, innovatively applied pedagogy, close collaboration with relevant industries, excellence in teaching, and high-quality undergraduate research" were among several noteworthy recommendations [19]. It was further extended to a national value system and graduate attributes were promoted by an internationalized curriculum and attitude. This became even more clear over the past 20 years as the Singaporean government has implemented practical and innovative policies in Higher Education [20]. In a recent trend shown in the report of the Committee on the Future Economy (CFE) and the Research, Innovation, and Enterprise (RIE) [21] strategy, it is also safe to argue that an inventive and entrepreneurial spirit is emerging, as affirmed by the Ministry of Education [20] that the institutions train students not only for today's economy but also for a future one with new jobs and difficulties that do not exist today.

In the National Research Foundation, Research, Innovation and Enterprise (RIE) 2025 plan [21], one of the aim of academic research was "To Sustain a vibrant, diverse and globally-connected research ecosystem that will attract and retain top research talent" (p. 41) Since the government is aware that the best research is frequently produced through collaboration with complimentary peers in the area. Academic staff and researchers naturally gravitate towards exploring international collaborations for their research interests. Opportunities were provided for high-profile university-wide or international research collaborations, as well as support for faculties looking for outside research grants.

Daquila [22] summarizes Singapore's higher education as underlining the need to consider the following desirable outcomes for its students and graduates: intercultural awareness and engagement, transformative experiences, collaborative learning (to work with people from different cultures, to solve complex and multidisciplinary problems), and global awareness (a global mindset for its students, teachers, and school leaders). The internationalization of higher education is nothing new in Singapore. It is embedded in Singapore's historical legacy, which resulted in a multiracial society made up of 5.3 million people from a variety of cultures and languages [22].

For instance, internationalization of National University of Singapore (NUS) has two dimensions: "internationalisation at home" and " internationalisation abroad" with a vision to become "a leading global university centred in Asia, influencing the future" ([22], p. 640). The number of international students attending NUS is one indicator of acceptance of multiculturalism in Singaporean institutes,

attracting international students is the "internationalization at home" dimension. For internationalization at home, various strategies, initiatives, and ideas were placed to draw many international students to NUS. Among them are the provision of disciplinary, multidisciplinary, and interdisciplinary programs of study as well as curriculum designs that take the global aspects of learning and research into account. Additionally, agreements for student exchange programs (SEPs) between NUS and foreign universities have been made. According to Provost Tan Eng Chye (2008), NUS has over 180 active partners spread across 27 different countries ([22], p. 641). International students also can be a significant source of revenue; they are often viewed in terms of broader economic contributions that go beyond the university budget. NUS and NTU both actively recruit international students, using appealing marketing materials and a variety of incentives [23].

In terms of the internationalization abroad dimension. NUS has initiated a variety of international programs, including SEP, NUS Overseas Colleges (NOC) internship programs, joint/double degree programs, summer programs, internships, field trips, study visits, research, enrichment, language immersion programs, clinical attachments, conferences, and community projects ([22], p. 641). In a speech by the Vice President of the university of NUS, it was emphasized that "We are cultivating an internationalist mind-set" since Singapore is a microcosm of the world due to its diverse racial makeup, raising up good citizens also helps to advance the idea of global citizenship, which is shared by all nations that value peace.

In a meeting of the Committee on the Future Economy [24], the NUS Overseas College (NOC) entrepreneurship program was specifically mentioned in the report and further emphasized such innovation links. The report makes the recommendation to "build on these links, involve more institutes of Higher Learning (IHLs), and expand our network in regional countries, so as to better expose the students to opportunities in Asia, the United States, and Europe" (p. 18).

The bilingualism policy was a vital element of Singapore's higher education internationalization strategy. According to the policy, all students enrolled in public schools, learn English as their primary language and their "Mother Tongue Language" (MTL) as a secondary language [25]. The importance of effective bilingualism is for promoting and developing a more harmonious and better-integrated multicultural Singapore society as well as for employment prospects.

In relation to international recognition based on ranking position, global influence, and global competitiveness, the ranking can also be partially determined by internationalization policies and initiatives at the university level. Other indicators which are citation rate of papers, international research network, employer reputation, and academic reputation, etc., the National University of Singapore (NUS) and the Nanyang Technological University (NTU) of Singapore were ranked 11th and 12th, respectively. According to QS [26], NUS has a 73.5 international student ratio of the total students, and an international faculty ratio is 100. The international research network ratio is 89.9 with foreign collaborators, including 25 Joint or Dual PhD programs with top European universities. In the RCEP region, it is unquestionably of practical significance to promote in-depth collaborative efforts and exchanges in higher education [18].

NTU is the second-largest university in Singapore, which is also contributing to the internationalization of Higher Education. The University's ethos continues to include internationalization as a key component: In a meeting, The President of International Affairs Bertil Andersson, in 2016 emphasized that, at NTU, "Internationalization is ingrained in everything we do" and "It is part of our DNA"

([23], p. 8). Further, the internationalization of education is reflected in NTU Vision as "A great global university founded on science and technology, nurturing leaders through research and a broad education in diverse fields" ([23], p. 8). Vision focuses on global aspirations as well but does so through disciplinary research rather than global grounding.

In NTU strategic planning for internationalization, hiring international faculty, enhancing the residential experience, providing opportunities for students to study abroad, being compatible with other cultures, deeper regional engagement, study abroad rates, international partnerships, and international recruitment were remaining prominent. Through individual participation in international university networks and alliances, NTU spearheaded the creation of the Asian Science and Technology Pioneering Institutes of Research and Education (ASPIRE) League and the Global Alliance of Technological Universities (Global Tech) alliances in 2009, which brought together top science and technology universities to address societal and sustainability issues on a global scale.

Internationalization of the Curriculum (IoC), and the "incorporation of an intercultural and international dimension into the content of the curriculum as well as the teaching and learning processes and support services" ([27], p. 209). To internationalize the curriculum, NTU and NUS academic programs often place a strong emphasis on international experience and curriculum based on foreign models or designs delivered in collaboration with foreign institutions publishing industry, and Singapore's innately global nature. In addition, NUS and NUT went above and beyond to create an international atmosphere on campus through activities, clubs, and dining choices. It is also believed that emphasizing "future-ready graduates" is inextricably linked to preparing students for the future. The Nanyang Technological University of Singapore (NTU) is 12th in the QS ranking with an international-student ratio of 74.1. and International faculty ratio is 100 [26].

1.2 Malaysia

Higher education has long played a key role in Malaysia's development, with the government recognizing its significance in its First Malaysia Plan in terms of providing the necessary workforce to support the nation's economy [28]. Malaysia, a multicultural nation, has a variety of offerings that can be tapped into. Globalization has made higher education accessible to all. Higher education is subject to both national and international agendas in keeping with globalization [29].

Malaysia's government, in general, and the Ministry of Higher Education (MoHE), in particular, have been working to make Malaysia a hub for international higher education. Higher Education institutes are on track to enroll 250,000 international students by 2025 with a current enrollment of 108,000 ([30], p. 7) The universities have been developing and carrying out various initiatives, such as providing offshore programs and creating MoUs and MoAs, to make this possible. Such initiatives will make it easier to collaborate internationally on research and innovation, education and learning, staff and student mobility programs, and much more. The advantages are genuinely numerous.

The Ministry of Higher Education devised strategies and programs to make Malaysia's higher education institutions to be more competitive internationally. Since 2014, Malaysia's government has been planning to become a global hub for tertiary education [31, 32]. These strategies seek to ensure that Malaysian universities become centers of excellence and function at a global level [33]. Malaysia aspires to become an

international student hub and, eventually, an innovation center. The National Higher Education Strategic Plan Beyond 2020 is the most visible national plan addressing internationalization. In process of internationalization of Higher Education and the National Higher Education Strategic Plan Beyond 2020, and in order to attain world-class status [34].

The National Higher Education Strategic Plan 2007–2020 emphasizes the importance of developing a knowledge-based economy through research and development. In line with this national strategy, building the image of a world-class university is vital. Local universities are being intensively inspected for their capacity to mitigate varied problems as they strive to compete with other world-class institutions. One persistent difficulty was the institution's capacity to attract postgraduate candidates from all over the world [35]. In line with the Malaysia Education Blueprint 2015–2025, the importance of reaching worldwide prominence through the internationalization of higher education was emphasized. The Malaysia Higher Education Blueprint's [36] strategies include improving the support system for international students, increasing the proportion of international students, particularly postgraduates, and strengthening the promotion and marketing of Malaysia's higher education system.

In continuation to the internationalization of Higher Education, Universities in Malaysia adopt different strategies, that is, the accreditation of degree programs with renowned international institutes for quality assurance and international recognition, cultural exchange programs, balancing local and international knowledge by attracting international students, and introducing local knowledge, and inviting renowned international academics to its campus for public events, talks, and lectures. The main objective of internationalization is to give students an experience of Malaysian culture. International students are encouraged to learn the national language in order to improve their ability to communicate and interact with the local population [37]. Another effort for internalization was the establishment of an international branch campus and the pursuit of international pedagogical practices to enhance its program by adopting and adapting international curricula. Malaysia currently has nine branch campuses. These branch campuses must conform to Malaysian policy as well as quality standards [37].

For QS ranking, initially, four research universities were applied that includes the University of Malaya (UM), the University Kebangsaan Malaysia (UKM), the University Sains Malaysia (USM), and the University Putra Malaysia are the four research universities (UPM). During the introduction of the 10th Malaysia Plan on June 10, 2010, University Teknologi Malaysia (UTM) was the most recent addition, becoming the country's fifth research university [35]. All the above universities ranked among 200 World-class universities according to the ranking University of Malaya (UM) ranked 65 with a 53.0 international student ratio and 43.6 International faculty ratio, University Putra Malaysia (UPM) ranked 143 with a 92.7 international student ratio and 44.2 international faculty ratio, University Kebangsaan Malaysia (UKM)-144 and the international student ratio was 38.7 with 42.8 international faculty ratio, University Sains Malaysia (USM)-147 with a 75.3 international student ratio and international faculty ration is 25.4, University Teknologi Malaysia UTM-191 with 77.2 international student ratio and 12.0 international faculty ratio [26].

1.3 Philippine

Internationalization is a current priority for higher education institutions (HEIs) in the Philippines and many other countries across the world. Internationalization has become a buzzword that aids in the growth of HEI academic programs [38].

In the Philippines, the Commission on Higher Education (CHED) has similarly acknowledged the necessity for internationalization as it prepares to fund major research on this issue in light of the thousands of HEIs that include both public and private institutions. CHED's mandates include improving institutional quality assurance and directing all HEIs to put in place the essential processes to ensure graduates can competently cope with the demands of a fast-changing globalized world while also keeping global competitiveness in mind [39]. Philippine universities have been doing internationalization works for the past decades and in recent years, these internationalization efforts have been articulated in the universities' vision and mission and their long-term plans. In a vision-mission of the Philippine private university, it is stated that it would like "to produce graduates that are globally competitive and to promote values and learnings toward national and global development". In most universities' strategic plans, international staff and student recruitment are a top priority. The rationale for having an international staff and student mix is that it helps students develop an international perspective, improves intercultural understanding, and facilitates intercultural integration [40].

Internationalization of higher education in the context of the Philippines is the process of incorporating international, intercultural, and global dimensions into the objectives, functions (teaching, learning, research, and service), and delivery of higher education [37]. It entails a process of higher education exchange between nations, with partnerships between nations, national higher education systems, and between institutions of higher education.

Internationalization of faculty and students in a higher education institution necessitates the use of a common language (lingua franca) for teaching and learning as well as on-campus communication. Because English is the de facto language of worldwide literacy, it has increasingly become the de facto language of learning and instruction in universities that have many international students. As several academics have pointed out, internationalization is synonymous with English-medium education [41]. English is used as a medium of instruction in the Philippines, in order to effectively understand the instructions and the content, a student must have a fair understanding of the English language. A student must pass the English language at the credit or distinction level in order to be admitted to universities and other higher institutions of learning. English is also the only language spoken in university communities throughout Southeast Asia, particularly in the Philippines [42].

For the internationalization of HE, Significant changes have been made in the higher education sector of the Philippines, especially since the K–12 program's implementation in 2013. As a result of the 12 educational system, which mandates that all students complete Grades 11 and 12 before enrolling in university, significant changes to the tertiary curriculum have been made. Making the Philippine educational system competitive with those of other nations and offering high-quality tertiary education that meets international standards are both parts of that change.

The ASEAN Economic Community (AEC) was established in 2015 with the aim of achieving a cohesive and integrated ASEAN community. This swift in Philippines tertiary curriculum also resulted from the push for the AEC also tends to lead to the need to internationalize the Philippine higher education sector, in which higher mobility among the member countries is pushed through a more unified and credit-transferring HE in the ASEAN, though much remains to be done.

According to The Bureau of Immigration, 47,478 applications had received for student visas and special study permits in 2012 [43], which indicates the internationalization of higher education in the Philippines via the flow of international student

study in Philippines HEIs. The initiatives for internationalization were designed to ensure the smooth execution and sustainability of the institutional thrusts of research, instruction, and community extension/service. So far, instruction has been internationally accredited as a result of initiatives such as overseas study tours and curriculum alignment with international frameworks and the exchange of best practices via study tours/visits to the best universities all over the world.

Initiatives for the internationalization of higher education institutions in the Philippines include faculty exchange, visiting professors, international speakers, and student exchange. International publications, research capability building, enhancement and participation in international research conferences and dissemination of research results, and sharing of best practices are examples of research initiatives. These include international reviews and publications, databases, conferences, seminars, workshops, and colloquia on discipline and specialization-related related research [44]. Aside from international practices, the Philippines is unique in providing Liberal Art induced education, "nurturing wisdom through liberal Art" is mentioned as a key feature of the University of the Philippines (UP) [45]. According to the School Educational Philosophy, UP graduates must also have a broad mind, strong character, and a generous spirit. These qualities are fostered by a solid foundation in the arts and sciences as well as any specialist courses that their programs may require [46].

In parallel to the growing number of international students, four universities applied for QS ranking in 2019. University of Santo Tomas, De La Salle University, Ateneo de Manila University, and the University of Philippines [47]. Efforts are being made to ensure that this ranking system achieves better results by strengthening international networks and emphasizing the role of research in improving educational quality [48]. In the QS Ranking [26], three of the above universities are in the ranking, University of Philippines ranked 399 with a 1.3 ratio of international students and international faculty ration is 2.1, Ateneo de Manila University ranked 651–700 with 2.9 ratio of international students and international faculty ration is 3.4. The De La Salle University ranked 801–1000 with international student ratio 3.0 and international faculty ratio is 2.2 [26].

1.4 Thailand

Thailand's efforts to internationalize have gradually yielded some positive results since 1990, following the formulation of the First 15-Year Long-Range Plan on Higher Education (1990–2004), particularly in terms of the number of international students, programs, and partnerships in higher education [49]. These internationalization efforts were continued with the Seventh National Higher Education Development Plan (1992–1996) but were subsequently hampered by the structural reorganization of government agencies mandated by the National Education Act of 1999.

Attempts have been made to comprehend and then develop internationalization processes that are most appropriate for Thai higher education. Experts from Asia and beyond were brought in to provide consultations and develop guidelines. The integration of international, intercultural, and/or global dimensions into a program of study's learning outcomes, assessment, teaching methods, and support services is known as "internationalization of the curriculum" [50, 51]. In a journey of internationalization, the curriculum of universities was updated to meet the need of global demands and to promote diversity in campuses, field study, and research collaboration programs, internships, and study abroad have also been promoted as among

the institutional initiatives of promoting internationalization. These opportunities, however, appear to be limited because they rely heavily on external funding, primarily from the government [52]. International experiences, on the other hand, have become critical factors in faculty recruitment, tenure, promotion, and development. Universities are given opportunities to broaden their international perspectives and competitiveness, particularly in the areas of foreign language study, international curriculum development, and advanced technology.

The internationalization of higher education is part of Thailand's First 15 Year Long Range Plan on Higher Education (1990–2004), which aims to promote Thai universities and colleges abroad, raise Thailand's standing and economic competitiveness abroad, and enhance and uphold Thailand's national reputation and international relations [53]. The movement was revitalized and fueled further by the 2015 establishment of the ASEAN Economic Community (AEC) and Thailand's national vision of becoming a regional education hub. International programs, for example, have grown in popularity in recent decades. Mostly all higher education institutions, if not all faculties, have developed international programs, either independently or in conjunction with existing ones. Collaborations with international institutions are also desired for collaborative research and exchanges. On the surface, Thai higher education internationalization appears to be extremely active and productive. However, there are significant formidable challenges that will remain in the coming decades [49].

According to Mayot [54] and Nilphan [53], Thai universities have four roles and missions that are connected to the globalization of higher education: teaching, research, service, and cultural literacy. Universities in Thailand strive to improve the graduates' ability to compete on a global scale, increase the number of international programs, increase academic collaboration and exchange with universities and colleges abroad, advance the research capacity and knowledge of related fields abroad, and advance cross-cultural understanding through international cooperation. While in terms of cultural literacy, universities work to improve students' understanding of cross-cultural advancements and support the establishment of Thai cultural centers and Thai study programs abroad, the service refers to the improvement of service activities and knowledge sharing with overseas institutions through international cooperation [55].

Thailand positioned itself as the leader of higher education in ASEAN in the Second 15-Year Long Range Plan on Higher Education (2008–2022). The second 15-year plan was divided into two sections. Part one describes how the local economy and global economy have affected Thailand's society and higher education system, and part two outlines effective solutions to problems relating to higher education [56]. To further lift internationalization, the Thai Government signed many agreements with foreign institutions in Australia, Japan, China, and France.

For global rankings like Times Higher Education World University Ranking and QS World University Ranking, Thai higher education institutions are overly focused on their rankings when it comes to rather than how to apply and adapt the criteria to best suit their own unique contexts, strengths, and objectives. Thailand began to internationalize its higher education system after the Cold War, under the influence of the USA and globalization, in order to meet new demands [55]. Toward Internationalization, more emphasis was placed in Chulalongkorn University's strategic plan (2021–2024) on "positioning the university as a leader in creating knowledge and innovations from cutting-edge research," while producing graduates who are "future innovators capable of adding value to existing resources and building ties

with global communities". As the country's first established university, Chulalongkorn University will essentially be established as a national university that has proudly advanced internationally [57].

In the QS ranking of 2022, Two of the Thai universities, Chulalongkorn University was on 215 and Mahidol university was on 255 Ranking. The mission statement of Mahidol University guides itself to internationalization "Mahidol University aspires to be a world-class institution with a national and international reputation for excellence in teaching and research". Further in 20 years' National strategic directions of Mahidol University (2018–2037), the set vision is "To be 01 in 100 world-class universities" ([58], p. 19). The international student ratio at Chulalongkorn University is 2.8 with an international faculty ratio of 9.6 and while Mahidol University's international student ratio is 4.4 and the international faculty ratio is 5.7 [26].

1.5 Indonesia

Internationalization is an important aspect of Indonesian higher education. According to the Indonesian government, all academic institutions should participate in internationalization. The specific practice of internationalization of higher education in Indonesia in this process closely focuses on the local regional characteristics, and always aims to enhance international cooperation and build global confidence, which finally attracts international students to Indonesia [59].

Internationalization and multiculturalism are two globalization behaviors that have been promoted throughout higher education institutions as part of the efforts to globalize higher education in Indonesia [60]. The flexibility in creating international programs, opening study programs, or hiring foreign lecturers, as well as the budget amount allocations by the government, played a significant role in the implementation of the internationalization of programs at state higher education institutions.

In 2014, the release of Decree No. 14 by the Ministry of Education and Culture (MOEC) addressed global collaboration in higher education. The government has given university faculty members competitive research grants for conducting international research collaboration, and MOEC has assisted universities in doing so. MOEC Active contributed and encouraged universities to offer combined degrees, dual degrees, transfer/credit earning, joint publications, and joint seminars in response to the globalization of education. The ministry has additionally led AIMS (ASEAN International Mobility for Students) for internationalization of higher education in partner countries [37]. Indonesia compared to its Southeast Asian neighbors, such as Singapore, Malaysia, and even Vietnam, there was little staff and student mobility, and there were no international branch campuses in the nation. Two government initiatives at the beginning of 2018—welcoming foreign providers and enlisting international academics—suggested that things were about to change. The inability of those initiatives to make progress, however, begs the question of what has prevented Indonesian higher education from becoming internationally competitive and what can be done to change the situation.

In 2018, the first Internationalization initiative was embracing international branch campuses, seeking to enlist the help of reputable suppliers to enhance Indonesian human resource training. The second initiative was the recruitment of 200 top-class professors for Indonesian universities, it was determined that the first program was successful in enlisting foreign academics through a sabbatical placement program. Through internationalization efforts, these two initiatives hope to raise the standard of higher education in Indonesia. The need for knowledge

transfer from international academic institutions and universities to enhance human resources, increase research productivity, and foster innovation in Indonesian higher education appears to be recognized by policymakers [61]. The 211 and 985 projects in China have experience that can be applied to the situation in Indonesia, particularly in terms of how to push for the transformation of important institutions to help them become universities of international renown. The secret to transforming and globalizing Indonesian higher education may lie in its readiness to take lessons from its neighbors.

For the internationalization of higher education, Indonesia set different strategies and practices that foster internationalization, paying attention to publicity and promoting international projects through multiple channels is one of them. Promotion and marketing are not just economic means, but also essential means for higher education. Publicity is very important to higher education institutions in Indonesia, such as winning international projects and outstanding university achievements. Indonesia uses multi-channel methods to publicize international projects, primarily online publicity or paper printing, supplemented by participant oral publicity and has developed a comparatively perfect promotional and advancement system, which has greatly increased its international popularity.

Student mobility is another form of internationalization of higher education, in order to attract foreign students, Indonesia offers full or partial scholarships when recruiting international students. The goal of providing scholarships for international students is to help the university grow by increasing the number of international students. Indonesia also has placed a high value on international exchanges and cooperation. It actively expands the global education market in addition to using its special geographic and natural advantages to draw in international research teams. Not only is the movement of teachers and students across borders crucial for the internationalization of higher education, but it also serves as a vital conduit for the transfer of knowledge and advances in science and technology.

Through the signing of memorandums of understanding and cooperation with other nations, Indonesia has successfully built strong relationships with universities like Jinan University and the Guangzhou University of Traditional Chinese Medicine. In addition, the Indonesian government has increased academic exchanges with foreign universities to raise the standard of higher education resulting in greater mobility of domestic students. This will be beneficial in encouraging local students to study abroad, allowing them to have an international learning experience and a more global perspective [59].

In addition to transnational cooperation programs, Indonesia has developed a number of preferential policies and scholarships to attract international students to study in Indonesia. Recruiting international students not only allows students to experience a foreign culture, gain technical competence, experience social culture, and master necessary skills, but it also provides significant economic benefits to their home country. Indonesia believes that the Internationalization of higher education is a two-way street. It is not only about encouraging foreign students to study in China, but also working to improve the mobility of domestic students, encourage local students to travel abroad, develop an international vision, and promote the internationalization of local students [59]. In addition, the Government has promoted the use of English as the instruction language in bilingual higher education programs that are focused on international exchange, and in 2015 a plan was announced to start creating an Indonesian/English bilingual curriculum that was used in all Indonesian universities [62].

Indonesia made efforts to compete in World QS Ranking in the QS Ranking of 2022, three of the Universities are in the 500 QS ranking. The Gadjah Mada University ranked 254 with 2.0 international students and 39.2 International faculty ratio. The University of Indonesia ranked 290 with 4.7 international students and 72.7 International faculty ratio and The Institute of Technology Bandung ranked 303 with 3.1 International students and 66.6 international faculty ratio [26]. In the vision statement of top-class Indonesian universities, the focus was based on serving the world and humanity with dedication and cultural values for the welfare of Indonesia and the world. Excellence, innovation, and independency were the core assets.

1.6 Pakistan

Modernization and globalization have increased competition among universities in the twenty-first century. To compete in the HE sectors and build a solid reputation, institutions are now working to attract the best staff, students, and research development strategies [63]. It is impossible to compete in the current global educational industry without focusing on internationalization and globalization in education [64].

The majority of developing nations, including Pakistan, struggle to keep up with the demands of international higher education standards [65]. Align with international practices, Universities in Pakistan are also putting efforts to adopt the standards of internationalization of higher education. The Higher Education Commission (HEC) implies Macro and Micro level planning for the development of higher education as well as the internationalization of Higher education in Pakistan. HEC is responsible to facilitate higher education institutes and liaison with international agencies to strengthen Pakistan's relations with different countries in education diplomacy and attracting international students. Aside from hunting international grants for Higher Education in Pakistan, Faculty development grants (Foreign and indigenous), International conferences, and workshop grants, HEC offers scholarship opportunities to foreign students, including students from least developed countries of the Organization of Islamic Cooperation (OIC) and Commonwealth, to study in top Pakistani universities.

Under, Allama Muhammad Iqbal Scholarships for Afghan Students (Phase-III), 4500 students from Afghanistan were awarded scholarships for undergraduate and postgraduate studies in 2021–2022. With the objective "To provide an opportunity to Pakistani universities to attract the students of neighboring countries for quality education" of the internationalization of Higher education [66]. This year, the Government of Pakistan through HEC has granted 1000 Scholarships to Sri Lankan students through its Pak-Sri Lanka Higher Education Cooperation Programme to study at various Pakistani universities and 50 Scholarships were granted for short-term Faculty Exchange between Pakistan and Sri Lanka for seminars, conferences and other academic and research-related activities [66].

Aside to attract international students, HEC provides Financial Assistance and Foreign Scholarships to Faculty members of HEC recognized Universities and fresh students including the ignored areas of Pakistan to ensure the opportunity for the provision of Higher education. Student mobility inside and outside Pakistan has increased at a rapid pace as a result of the efforts of the Higher Education Commission (HEC). According to Pakistan–Country Commercial Guide [67], 59,784 students studying abroad, primarily in the United States and the United Kingdom, Australia, Germany, Malaysia, and other countries. Under the HEC overseas scholarship scheme

this year, a total of 4986 scholars have been sent abroad under various scholarship programs for MS, Ph.D., or post-doctoral research. The majority of students went abroad to study technology, engineering, and biosciences [66].

To promote internationalization, Universities in Pakistan arrange international conferences for attracting international researchers to build research collaboration. As a result of the internalization of higher education and the globalization process, there is an increase in student's and academic staff mobility. A rapid increase in cross-border higher education, with intense competition among developed-world universities/institutions for collaboration/campus operation in foreign locations, has been observed. Despite the rapid expansion of higher education, the government is unable to meet the increasing demand. As a result, the government is under pressure to increase funding for higher education. Currently, the Government of Pakistan has signed Memorandums of Understanding (MOUs) with various foreign educational partner agencies and universities (US, UK, Asia, and Europe) for the selection of scholars, placement, monitoring, and disbursement of funds. Scholarships for these countries/universities are available through various HEC overseas scholarship programs [66].

Many foreign universities approach operating in Pakistan. The Higher Education Commission (HEC) of Pakistan introduced a policy in 2020, based on initiatives from Pakistan's higher educational institutions (HEIs), for Pakistani schools to establish international campuses as a way to improve their own standing while also allowing HEIs to offer their education programs to an international market [66].

In the QS ranking of 2022, 11 Pakistani universities have made it into the recently published QS World University Rankings for 2022 out of these three universities lie in the top 500 University ranking, The National University of Sciences and Technology (NUST) was ranked 358 with 5.7 international student ratio and 3.0 international faculty ratio. The Quaid-i-Azam University (QAU) is ranked 378th with 2.6 international students and 3.8 international faculty ratio. The Institute of Engineering and Applied Sciences (PIEAS) is ranked 398th [26].

The vision statement of QS Ranked Pakistani universities is focused on affordable high-quality education, entrepreneurship, social harmony, international recognition, national security, and socio-economic benefits with acceptance of cultural diversity, and honesty as common values. For the internationalization of Higher education, the NUST has taken many initiatives, that includes, global partnerships with 92 world-class universities, inbound and outbound exchange programs, scholarships for students and faculty, inbound delegation visits, and focal persons for internationalization and counted as champions of guidance for international Scholarships [68].

2. Conclusion

In an era of internationalization of HE, the states put efforts to compete for the internationalization of higher education and placement for word class universities. With few highlighted indicators of internationalization, that is, including global partnership, students and staff mobility, internationalization of the curriculum, research networks, SDG rankings, faculty citation rates, etc., states are in a condition to regulate the needs according to their contexts. In adopting the set indicators of internationalization, countries are having an edge over each other in conferring their context, however, the gear is toward the adaptation of global trends. At the macro and micro levels, states are having higher education bodies that prioritize the needs and

support at the national level and the institutional level which are unique in conferring to their outlooks and contexts, however, the efforts collectively drive to geared towards global demand and to compete with global competitors.

Acknowledgements

The HEAD Foundation, Singapore.

Author details

Hazri Jamil[1] and Khadija Jaffar[2*]

1 Visiting Researcher, University Sains, Penang, Malaysia

2 Lecturer Education, Faculty of Social Sciences, Balochistan University of Information Technology and Management Sciences, Quetta

*Address all correspondence to: khadijajaffar318@gmail.com

References

[1] Davlyatshaev AA. The need to analyze regional investment projects. Monthly Scientific Journal Yekaterinburg. "National Association of Scientists". 2020;**55**(part 2):28-32

[2] de Wit H. An Introduction to Higher Education Internationalization. Milan: Vita e Pensiero; 2013

[3] Van der Wende M. Internationalization of higher education in the OECD countries: Challenges and opportunities for the coming decade. Journal of Studies in International Education. 2007;**11**(3-4):274-289. DOI: 10.1177/1028315307303543

[4] Davlyatshaev AA. Internationalization Processes and Their Role in the Development of Interuniversity Relations. Central asian journal of innovations on tourism management and finance. 2021;**2**(11):48-55. DOI: 10.47494/cajitmf.v2i11.166

[5] Beerkens E. Globalisation and higher education research. Journal of Studies in International Education. 2003;**7**(2):128-148

[6] Appadurai M. Modernity At Large: Cultural Dimension Of Globalization. Minneapolis, MN: University of Minnesota Press; 1996

[7] de Wit, J.H. 2012. Affirming Academic Values in Internationalization of Higher Education: A Call for Action. IAU – GlobalHigherEd. Available from: https://globalhighered.wordpress.com/tag/iau/

[8] Egron-Polak E. Affirming Academic Values in Internationalization of Higher Education: A Call for Action. GlobalHigherEd. 2012. Available from: https://globalhighered.wordpress.com/tag/iau/

[9] Wihlborg M, Robson S. Internationalization of higher education: Drivers, rationales, priorities, values and impacts. European Journal of Higher Education. 2018;**8**(1):8-18

[10] Tan I. Internationalizing higher education. Bulletin of Higher Education Research. 2005;**5**:2-4

[11] Khomyakov M, Dwyer T, Weller W. Internationalization of higher education: Excellence or network building? What do BRICS countries need most? Sociologias. 2020;**22**(54):120-143. DOI: 10.1590/15174522-99066

[12] Fan X, Liu H, Wang Y, Wan Y, Zhang D. Models of internationalization of higher education in developing countries—A perspective of international research collaboration in BRICS countries. Sustainability. 2022;**14**(20):13659. DOI: 10.3390/su142013659

[13] Kerr C. Troubled Times for American Higher Education: The 1990s and Beyond. SUNY Press; 1994

[14] Wit HD. Internationalization of Higher Education in the United States of America and Europe: A Historical, Comparative, and Conceptual Analysis. Greenwood Publishing Group Amazon.com; 2002. Available from: https://eric.ed.gov/?id=ED477234

[15] Van der Wende M. Internationalizing the curriculum in higher education: Report on a OECD/CERI study. Tertiary Education and Management. 1996;**2**(2):186-195. DOI: 10.1080/13583883.1996.9966900

[16] Temirkulov AA. The correct acceptance of the investment decision is a factor of success of implementation

of the process. Theoretical & Applied Science. 2020;**85**(5):689-692. DOI: 10.15863/tas.2020.05.85.126

[17] Wu P, Xiao-Chuan Weng C, Joseph S. Crossing the Rubicon? The implications of RCEP on anti-monopoly enforcement on dominant e-commerce platforms in China. Computer Law and Security Review. 2021;**42**:105608. DOI: 10.1016/j.clsr.2021.105608

[18] Zhao J. 2nd International Conference on Information Technology, Education and Development (ICITED 2022). UK: Francis Academic Press; 2022. DOI: 10.25236/icited.2022.013

[19] Ministry of Education. Report of the Committee on University Education Pathways Beyond 2015 (CUEP): Greater Diversity, More Opportunities. Singapore: Ministry of Education; 2012

[20] Ministry of Education. 2016. Education statistics digest 2016. Available from: https://www.moe.gov.sg/docs/default-source/document/publications/education-statistics-digest/esd-2016.pdf

[21] RIE 2025 Plan. 2020 National research foundation

[22] Daquila TC. Internationalizing higher education in Singapore. Journal of Studies in International Education. 2013;**17**(5):629-647. DOI: 10.1177/1028315313499232

[23] Sanders JS. Comprehensive internationalization in the pursuit of 'world-class' status: A cross-case analysis of Singapore's two flagship universities. Higher Education Policy. 2018;**33**(4):753-775. DOI: 10.1057/s41307-018-0117-5

[24] Committee on the Future Economy. 2017. Report of the committee on the future economy pioneers of the next generation. Available from: https://www.gov.sg/~/media/cfe/downloads/mtis_full%20report.pdf

[25] Tan C, Ng PT. Functional differentiation: A critique of the bilingual policy in Singapore. Journal of Asian Public Policy. 2011;**4**(3):331-341. DOI: 10.1080/17516234.2011.630227

[26] QS World University Rankings. 2022. Top universities. Available from: https://www.topuniversities.com/university-rankings/world-university-rankings/2022 [Accessed: December 4, 2022]

[27] Leask B. Using formal and informal curricula to improve interactions between home and international students. Journal of Studies in International Education. 2009;**13**(2): 205-221. DOI: 10.1177/1028315308329786

[28] GOM (Government of Malaysia). First Malaysia Plan. Kuala Lumpur: GOM; 1965

[29] Wan C, Sirat M. Internationalization of the Malaysian higher education system through the prism of south-south cooperation. International Journal of African Higher Education. 2018;**4**(2):79-90. DOI: 10.6017/ijahe.v4i2.10298

[30] MOE. Malaysia Education Blueprint 2015-2025 (Higher Education). Malaysian Ministry of Education; 2013 Available from: https://www.um.edu.my/docs/um-magazine/4-executive-summary-pppm-2015-2025.pdf

[31] Bernama. Maszlee: Edutourism steadily gaining popularity in Malaysia. Malay Mail. 2019 Available from: https://www.malaymail.com/news/malaysia/2019/11/30/maszlee-edutourism-steadily-gaining-popularity-in-malaysia/1814705

[32] Thomas A, Wee H. Educational tourist motivations, destination image, and destination selection behavior in an

extended S-O-R model: A preliminary analysis. International Journal of Academic Research in Business and Social Sciences. 2022;**12**(10):689-692. DOI: 10.6007/ijarbss/v12-i10/14849

[33] Grapragasem S, Krishnan A, Mansor AN. Current trends in Malaysian higher education and the effect on education policy and practice: An overview. International Journal of Higher Education. 2014;**3**(1):21-28. DOI: 10.5430/ijhe.v3n1p85

[34] Ministry of Higher Education, Malaysia (MOHE). 2007. The National Higher Education Strategic Plan Beyond 2020. Available from: https://books.google.com.pk/books/about/The_National_Higher_Education_Strategic.html?id=phiJAQAACAAJ&redir_esc=y

[35] Sheriff NM, Abdullah N. Research universities in Malaysia: What beholds? Asian Journal of University Education. 2017;**13**(2):35-50

[36] Ministry of Higher Education. Executive Summary. Malaysia Education Blueprint 2015-2025 (Higher Education). 2 Aug 2015. Available from: http://www.moe.gov.my/cms/upload_files/articlefile/2013/articlefile_file_003114.pdf

[37] Jamil H, Ling OP. Institutional Policies and Initiatives for the Internationalization of Higher Education in Southeast Asia (Policy Brief-No-05). Singapore: The HEAD Foundation and National Higher Education Research Institute (IPPTN). 2018. Available from: https://headfoundation.org/wp-content/uploads/2020/11/THF-Policy-Brief-No-5.pdf

[38] Narbarte, M. P., & Chan, J. M. A. 2022. Correlates of internationalization of higher education institutions in the Philippines. 8ISC Abstract Proceedings, 64

[39] Cinches MF, Russell RL, Borbon ML, Chavez JC. Internationalization of higher education institutions: The case of four HEIs in the Philippines. Liceo Journal of Higher Education Research. 2017;**12**(1):17-35. DOI: 10.7828/ljher.v12i1.961

[40] Tsui AB. English as lingua franca on campus: Cultural integration or segregation? Dynamic Ecologies. 2014:75-93. DOI: 10.1007/978-94-007-7972-3_6

[41] Harder P. English in Denmark: Language Policy, Internationalization and University Teaching. Museum Tusculanum; 2009

[42] Kirkpatrick A. English as a medium of instruction in east and Southeast Asian universities. Dynamic Ecologies. 2014:15-29. DOI: 10.1007/978-94-007-7972-3_2

[43] Tubeza, P. 2013. Number of foreign students up 14% to 47,000–BI. Available from: https://globalnation.inquirer.net/61819/number-of-foreign-students-up-14-to-47000-bi [Accessed: December 30, 2019]

[44] Rosaroso RC, Yap C, Gador S. Current initiatives on internationalization of education in selected higher education institutions in the Philippines. Asia Pacific Journal of Education, Arts and Sciences. 2015;**2**(4):23-30

[45] Epistola SV. Nurturing Wisdom Through the Liberal Arts. University of the Philippines; 2019 Available from: https://up.edu.ph/nurturing-wisdom-through-the-liberal-arts/

[46] Vice President for Academic Affairs. Philosophy of Education and Graduate Attributes. University of the Philippines; 2019 https://up.edu.ph/philosophy-of-education-and-graduate-attributes/

[47] Vilay PL. 4 Philippine universities in QS World Rankings by Subject.

Philippine Star. 2019 Available from: https://www.philstar.com/headlines/2019/02/27/1897183/4-philippine-universities-qs-world-rankingssubject#jrhLiUemk2YuYwGd.99

[48] CHED (Commission on Higher Education). 2019. RP-UK educational collaboration key strategy in internationalization and competitiveness. Available from: ched.gov.ph [Accessed: November 8, 2019]

[49] Kanjananiyot P, Chaitiamwong C. The internationalization of Thai higher education over the decades: Formidable challenges remain! Education in Thailand. 2018:271-321. DOI: 10.1007/978-981-10-7857-6_11

[50] Leask B. Internationalizing the Curriculum. Routledge; 2015

[51] Peterson PM, Helms RM. Internationalization revisited. In: Maldonado-Maldonado A, Bassett R, editors. The Forefront of International Higher Education. Higher Education Dynamics. 2013;**42**:101-111. DOI: 10.1007/978-94-007-7085-0_7

[52] Duffy LN, Stone GA, Townsend J, Cathey J. Rethinking curriculum internationalization: Virtual exchange as a means to attaining global competencies, developing critical thinking, and experiencing transformative learning. SCHOLE: A Journal of Leisure Studies and Recreation Education. 2020;**37**(1-2):11-25. DOI: 10.1080/1937156x.2020.1760749

[53] Nilphan P. Internationalising Thai higher education: Examining policy implementation [Doctoral dissertation]. University of Leeds; 2005

[54] Mayot C. The impact of economy on higher education in Thailand: An analysis from the perspective of investment in education. ASAIHL-Thailand Journal. 2001;**4**(2):142-168

[55] Chen S. The political economy of internationalization of Thailand higher education. School of Administrative Studies Academic Journal. 2021;**4**(1):140-158 Available from: https://so05.tci-thaijo.org/index.php/SASAJ/article/view/244883

[56] OHEC. Office of the Higher Education Commission. Bangkok: Office of the Higher Education Commission; 2013

[57] Chulalongkorn University. 2021, Vision and strategy. Available from: https://www.chula.ac.th/en/about/administration/vision-and-strategy/

[58] Mahidol University. Strategic Plan 2018-2037. 2017. Available from: https://op.mahidol.ac.th/pl/wp-content/uploads/2018/11/Mahidol_Strategic_Plan_2018-203720Year.pdf

[59] Tian M. Development experience and enlightenment of internationalization of higher education in Indonesia. Transactions on Comparative Education. 2022;**4**(2):17-23. DOI: 10.23977/trance.2022.040203

[60] Sibawaihi S, Fernandes V. Globalizing Higher Education Through Internationalization and Multiculturalism: The Case of Indonesia. Wiley Online Library: Higher Education Quarterly; 2022

[61] Sutrisno A. Internationalization of Indonesian higher education: Recent initiatives and their problems. International Higher Education. 2019;**97**:12-13. DOI: 10.6017/ihe.2019.97.10941

[62] Dewi A. English as a medium of instruction in Indonesian higher

education: A study of lecturers' perceptions. English Medium Instruction in Higher Education in Asia-Pacific. 2017:241-258. DOI: 10.1007/978-3-319-51976-0_13

[63] Warwick P. The international business of higher education – A managerial perspective on the internationalisation of UK universities. The International Journal of Management Education. 2014;**12**(2): 91-103. DOI: 10.1016/j.ijme.2014.02.003

[64] Khalid J, Ali AJ, Khaleel M, Islam MS. Towards global knowledge society; A SWOT analysis of higher education of Pakistan in context of internationalization. Journal of Business. 2017;**2**(2):8. DOI: 10.18533/job.v2i2.65

[65] Zakaria M, Janjua SY, Fida BA. Internationalization of higher education: Trends and policies in Pakistan. Bulletin of Education & Research. 2016;**38**(1):75-88

[66] HEC. Allama Muhammad Iqbal Scholarships for Afghan Students (Phase-III). Higher Education Commission; 2022 Available from: https://www.hec.gov.pk/english/scholarshipsgrants/amisp/Pages/default.aspx [Accessed: December 11, 2022]

[67] Pakistan–Country Commercial Guide. 2022. International Trade Administration. Available from: https://www.trade.gov/country-commercial-guides/pakistan-education-and-training

[68] NUST. 2022. Mobilities – National University of Sciences and Technology (NUST). Available from: https://nio.nust.edu.pk/mobility/ [Accessed: December 11, 2022]

Section 2

Education in the Pandemic

Chapter 7

Pandemic Pivot: A Faculty Development Program for Enhanced Remote Teaching

Heather Leslie, Alejandra Lizardo and Ashley Kovacs

Abstract

The novel coronavirus COVID-19 pandemic has impacted the higher education sector all over the world and has been most disruptive to residential academic institutions that offer mostly, if not wholly, in-person instruction. Of the 1.5 million college faculty members in the United States, about 70% had never taught a virtual course prior to COVID-19. During spring 2020, colleges had to pivot to remote instruction without much notice for faculty to prepare. Some referred to this as "emergency remote teaching" as it did not allow adequate time to thoughtfully plan out a course for a remote format. Over the summer and fall of 2020, many colleges invested in training programs to help faculty design and deliver their courses in a remote format. This article describes an online faculty development program that was created for faculty at a residential liberal arts university that, prior to COVID-19, offered the majority of courses on campus in-person. The objective of the program was to help faculty plan out and design their remote courses in the Blackboard Learning Management System using an instructional design framework known as backward design. This program ended up receiving the 2021 Blackboard Catalyst Award for Training and Professional Development.

Keywords: COVID, remote teaching, online teaching, online learning, faculty development, online course design, instructional design, faculty training

1. Introduction

During the spring of 2020, higher education institutions had to pivot to remote instruction due to the COVID-19 pandemic where little advance notice was given to allow faculty to adequately plan and design their course for a remote format. This sudden shift was referred to as "emergency remote teaching" as opposed to online teaching because courses that are designed for online learning require months of planning, often in collaboration with academic technology and instructional design specialists. Like many institutions, the university described in this article was faced with a similar dilemma of having to move all of its courses, the majority of which are offered in person on campus, to a remote format. For the spring 2020 term, the

institution extended spring break by one week and live training sessions were held for faculty to learn Zoom and Blackboard basics to finish out the remainder of the spring semester.

A survey of 400 faculty conducted by the Office of Institutional Research found that prior to spring 2020: 69% of faculty respondents had taught exclusively in an in-person classroom environment; 13% had taught a hybrid class (partly in-person and partly online); and 18% had taught at least one class fully online. About 20% of faculty respondents were already using Blackboard at the time they transitioned to the remote environment and 12% were experienced with using Zoom. The report on the survey results indicated that, overall, faculty were resilient and resourceful in adapting quickly to remote teaching and that students were generally flexible and understanding, which some attributed to the fact that relationships had already been built in-person in the classroom before the pandemic hit [1–3]. This report also noted challenges faculty and students faced including technological challenges such as internet connectivity and equipment problems; pedagogical challenges such as engaging students in a remote class and students being in different time zones as well as Zoom fatigue; and other challenges related to the pandemic itself and the lifestyle changes people had to make that created additional stress.

To address the challenges related to pedagogical support, the authors of this article designed and facilitated a professional development program for faculty to help them plan and design a remote course using Blackboard Learning Management System and an instructional design framework known as backward design. The following describes the structure and content of the remote teaching faculty development program, the results from a conducted survey on faculty participants, lessons learned and reflections by the instructional designers of the program, and future directions for faculty development and support for remote teaching.

2. Enhanced remote teaching training program

During summer 2020 a training program for campus faculty was developed by four instructional designers from the university's learning design center. The training program consisted of an organization page in Blackboard called Remote Teaching Resource Center (RT101) and a course in Blackboard called RT102: Course Design for Enhanced Remote Teaching 102 (RT102). The organization in Blackboard (RT101) housed tutorial videos and job aids (written manuals with step-by-step instructions) on the technological tools available to faculty to teach their remote courses. Tools available included Blackboard, Zoom, and Panopto (a platform for creating and hosting videos). All faculty (including adjunct faculty) were automatically enrolled in the organization so they could get access to the training resources on using the technology tools. Faculty were encouraged to enroll in the course in Blackboard, RT102: Course Design for Enhanced Remote Teaching, and a stipend of $500 was issued to faculty who completed the course. Over the summer and fall of 2020, 257 faculty completed RT102.

The instructional designers who developed the training program usually work with faculty subject matter experts to create courses for the university's online programs. However, after the pandemic hit and the campus was closed, campus faculty needed pedagogical and technological support to teach their courses remotely and the university did not have a large staff of instructional designers to work with each individual on-campus faculty member one-on-one to redesign their course for

a remote format. Therefore, it was decided that the best way to provide the campus faculty with support at scale, was by introducing them to the basics of online course design via a training course. This course, RT102, had to be developed rather quickly in the span of about five weeks. The course launched in late June 2020, running multiple weekly sections in June, July, August, September, October, November, and January, and was facilitated by the same instructional designers who designed the course. In total, 30 training courses were facilitated in summer and fall of 2020. In addition to the training course, the instructional designers facilitated webinars during the summer of 2020 on strategies to engage students on Zoom that focused on flipped/active learning and retention strategies using Blackboard's Retention Center tool. Recordings from these webinars were posted in the RT101 organization so all faculty could access them even if they were not able to attend the webinars or the RT102 course. This article focuses mainly on the course, RT102, and the results, lessons learned, and future directions for faculty development for remote teaching.

2.1 Module 1

RT102 consisted of five modules with each module corresponding to a phase in the backward design process. Module One was about crafting clear and measurable learning outcomes using Bloom's (2001) Taxonomy action verbs (revised) [4]. This module focused on creating module-level learning outcomes that align to course-level and program-level learning outcomes. Faculty were asked to reflect about the big picture takeaways from their courses and how they can create meaningful and compelling learning outcomes that engage students and encapsulate their own goals for their course. Faculty participated in a threaded discussion forum on ways they can get students to engage with learning outcomes.

2.2 Module 2

Module Two was about creating assessments and rubrics that are used to evaluate student evidence of learning outcomes achieved. This module focused on designing authentic assignments that allow students some choice and autonomy to demonstrate their achievement of the learning outcomes [5]. Unlike many conventional forms of assessment such as multiple-choice exams, authentic assessment requires students to "do" the subject and mimics real-world problems or situations that people face in the field [6]. Examples of authentic assignments include projects, experiments, demonstrations, presentations, and other assignments that result in an artifact that students submit. This artifact provides evidence of the learning outcomes achieved and students can choose to showcase their work in a portfolio for potential employers to view. In this module, faculty also took an online proctored exam so they could experience what it's like from a learner perspective. Because many faculty turned to online proctored exams in spring 2020, this allowed faculty to gain some insight on the student experience to inform their own course design choices. Faculty discussed their personal experience taking the exam and presented their assessment ideas in a blog activity.

2.3 Module 3

Module Three was about creating peer learning activities that prepare students to succeed on assignments, engage meaningfully with their peers, and gain constructive

feedback. This module focused on pedagogical aspects of social learning theory such as social presence in online interactions and the importance of developing community [7]. This module also included practical resources on asynchronous technological tools to facilitate peer learning in Blackboard such as discussion boards, blogs, wikis, and group tools. Faculty shared their ideas for encouraging students to engage with each other in a collaborative wiki activity.

2.4 Module 4

Module Four was about curating and creating instructional materials such as readings, videos, and web resources that align to the learning outcomes, assessment, and learning activities. This module highlighted the use of open educational resources (OER), which have been known to improve student retention and engagement, as an alternative to traditional textbooks [8]. This module also focused on pedagogical aspects of multimedia learning [9] with practical resources to support faculty's creation of instructional videos. Faculty shared their ideas for their own instructional materials in a group threaded discussion activity.

2.5 Module 5

The final module (Module Five) was a faculty showcase where faculty present their plan for how they intend to apply the backward design framework to their remote course. Faculty could choose to present their plan as a recorded video presentation, written paper, or slide deck, following the principles of universal design for learning [10] and authentic assessment. Faculty would then upload their showcase to a discussion forum to share with peers and comment on each other's work. With permission, faculty showcases were also posted in RT101 Blackboard Organization and organized by school, department, and program so that other faculty could view their colleagues' showcases from past cohorts and get inspiration or ideas for their own showcase. In Module Five, faculty also filled out a self-evaluation rubric to rate themselves on their plan for learning outcomes, assessments, peer learning activities, and instructional materials and reflect on their learning and takeaways from the course. Faculty submitted their self-evaluation rubric as an assignment so only the course facilitator would be able to view it.

Each module followed a consistent format which included:

- An introduction to the topic.
- Module learning outcomes.
- Recorded video presentations on the topic.
- Foundational resources consisting of curated readings on the pedagogical aspects of the topic.
- Practical resources consisting of curated readings and videos on the application aspects of the topic.
- Hands-on course design prep activities.

- Tutorial demo videos and job aid documents with written instructions and corresponding screenshots on how to use tools in Blackboard based on the module topic.

- An asynchronous peer learning activity (discussion, blog, wiki or group) for faculty to discuss their course ideas with colleagues

3. Results

The following describes the results from a survey given to faculty after they completed the RT102 course. There were 125 faculty who filled out the survey. Here is a summary of the survey results on the overall satisfaction rate from the RT102 course.

3.1 Post-course survey

See (**Table 1**)

	Number of faculty	%
Very Satisfied	42	34%
Satisfied	64	54%
Neutral	10	8%
Unsatisfied	7	6%
Very Unsatisfied	2	2%
Total	125	100%

Table 1.
Overall satisfaction rate from RT102.

3.2 Follow up survey

Faculty were asked in a follow-up the survey if they were able to apply what they learned in the training to design their own remote course. There were 77 faculty who filled out the survey.

	Number of faculty	%
Strongly Agree	33	43%
Agree	29	38%
Neutral	12	15%
Disagree	3	4%
Strongly Disagree	0	0%
Total	77	100%

Faculty comment highlights are included in Appendix 1. The faculty development program was the recipient of the 2021 Blackboard Catalyst Award for Training and

Professional Development which recognizes individuals and/or institutions "who use Blackboard programs to support and enhance professional development within or outside their organization" [11].

4. Lessons learned

Survey results from faculty participants in RT102 indicate that, overall, this faculty development course was successful in terms of faculty satisfaction with the course and faculty being able to apply what they learned. It was helpful for faculty to take an online course (RT102) from a learner perspective since many of the faculty participants had never taken an online course before and were now expected to teach their courses remotely when COVID-19 hit. Getting first-hand experience from a learner perspective can inform faculty's course design as well as pedagogical and technological choices for their own remote course [12]. This was especially true for faculty who gained first-hand experience taking an online proctored exam. After taking the exam, many faculty shared in their blog post that they found the experience stressful and invasive and would opt instead for alternative forms of assessment, like authentic assignments. Other faculty indicated that they would continue to use proctored exams but that they would be better able to prepare their students for what to expect. Many faculty stated that they felt taking an online course with colleagues from their department or discipline was a beneficial experience.

Some of the challenges faculty cited was the time commitment required to complete the course and the difficulty with being able to transfer certain courses or disciplines to a remote format such as hands-on science labs. Along these lines, some faculty did not think that the backward design framework worked well for their subject matter and that the framework presented in RT102 was too structured and did not allow enough flexibility. This is a valid critique of backward design as not all learning is linear and not all learning can be planned out in advance. Some faculty who are used to being able to improvise and teach material on the fly as they do in-person may find the framework of backward design limiting and cumbersome. Additionally, some faculty from STEM disciplines and in fine arts such as sculpting did not feel that backward design was a framework that worked well for their discipline. Perhaps a competency-based framework would work better for some STEM disciplines.

Some faculty were expecting the RT102 course to focus only on technology and were surprised by the focus on the methodology of design. One faculty commented: "Frankly, I was surprised that the course spent so much time and scholarly work surrounding learning outcomes; I thought it was simply training regarding tech. VERY GLAD about the emphasis on learning outcomes, as we all aim to be as on-target with these with the remote and hybrid versions of our classes as possible." Another faculty member stated that the workshop changed her perception. "I had no idea what backward design was. The information on each module was not only helpful, it really changed how I can teach and learn from the online environment." Because many faculty do not receive formal training in course design or pedagogy in their doctoral program, it is helpful for them to receive professional development in areas that can help them improve their teaching.

While some faculty stated that they plan on incorporating what they learned from RT102 into their in-person or hybrid classes, others viewed the backward design approach as being associated only with the online modality. Some faculty may view remote teaching along with backward design as a temporary shift and that "it's easier

to cover more material in a face-to-face class." Others shifted their perspective on how to teach, regardless of modality, stating that RT102 helped in "reminding us to focus on the student experience, and what they should learn, and working backward from there to design the course."

It should also be noted that the instructional designers who created RT102 have a background in creating fully online asynchronous courses. The campus faculty came from a background of teaching mostly in-person courses and were under the impression that they were not expected to immediately pivot to teaching "online" courses when COVID-19 hit. Rather they were expected to teach remotely, using a combination of Zoom and Blackboard.

Online course design typically requires months of planning and usually involves instructional designers, academic technology specialists, librarians, and faculty subject matter experts. It was not feasible to transition all campus courses to online courses given the limitations of staff resources and time required to complete such an undertaking. Hence, the rationale for creating a faculty development course to help faculty transition to teaching their courses remotely. However, going forward, it would be prudent to explore alternative frameworks to backward design that are more agile and adaptable for remote teaching as opposed to frameworks used predominantly in online learning.

Additionally, it is worth considering ways to restructure faculty development programs to be less time intensive and using perhaps micro-learning modules or mini courses in order to accommodate busy faculty with heavy workloads. This was the rationale for extending the RT102 course duration from one week to two weeks. Additionally, compensating faculty for their time to engage in professional development is a worthwhile investment in course quality as the university did in this case. When possible, allotting sufficient time for faculty to engage in professional development by reducing workload expectations can also pay dividends toward teaching excellence and faculty job satisfaction [13]. Having faculty participate in courses that mimic the student experience can also allow the opportunity for faculty to develop learner empathy which can result in their ability to design learner-centered courses, an approach considered effective in education [14]. This becomes increasingly important as new models of teaching and learning, including online and hybrid modalities, become more mainstream in the near and distant future as well as in the case of emergencies when universities will need to, once again, pivot to the remote teaching format.

5. Future directions

Although no one knows what the future holds, some are predicting that higher education will continue to rely more heavily on digital technology [15]. Others are forecasting that this trend toward digitization in higher education will only expedite post-COVID as evidenced by the explosion of new technology tools coupled with people becoming more acclimated to working and learning remotely [16]. For students who grew up using screens and are comfortable with online interactions, the shift to online courses may not pose as big a learning curve compared to educators who have historically relied less on technology. As institutions of higher education position themselves for a new period of technological disruption, consideration must be given to faculty development to prepare instructors for the future of teaching. The work of teaching will continue to evolve with the advances made in technological innovation, impacting pedagogies faculty use. Likewise, pedagogies will also influence technology as new tools are developed based on learning science and expertise in education.

Attitudes toward technologies and pedagogies also impact their widespread use and adoption. Even though online education has grown substantially in recent decades, prior to COVID-19, most college faculty had never taught an online course and likely had no desire to do so. A previous study found that most faculty, administrators, and students perceived online education to be inferior as compared to face-to-face delivery in six different categories: retention of course content, critical thinking, rigor, discussion depth, engagement, and quality [17]. But during the pandemic, many did not have a choice. It was remote teaching or nothing if a campus was closed.

Attitudes are also continuing to shift toward more student-centered educational experiences [18]. If universities are going to live up to the ideals of increasing access to liberal education and improving student outcomes, then planning the design of education using frameworks such as backward design will continue regardless of if the education experience is offered in person or online. Universities may also find themselves needing to be more versatile as they adapt and evolve toward the future.

While the pivot to remote teaching was not perfect, education was able to continue during an emergency thanks to online technology. One certainty about the post-pandemic future is that disruptive emergencies such as natural disasters and events will continue to impact education delivery. And once again universities will find themselves needing to pivot to a virtual format. Regardless of whether the approach toward remote teaching is proactive or reactive, the investment in faculty development programs aimed to support faculty in their technological and pedagogical advancement will be a necessary priority for universities in the future.

6. Conclusion

This chapter described a faculty development program that was designed to help campus faculty transition to teaching their courses remotely during COVID. Overall, this program was successful according to faculty satisfaction surveys and the Catalyst Award that was given to the team in the category of professional development and training. As the world moves forward, technology continues to advance and evolve, providing numerous opportunities to innovate in the education space. There is no longer a disconnect between online and on-site as modalities are fluid. Institutions that invest in faculty development will be more prepared to pivot to online in the next emergency. They will also be better positioned to reimagine how education can be transformed for student-centered learning and success in the years to come.

Additional information

Parts of this book chapter were initially published as a preprint article in the institutional repository, Digital USD, in January 2021. The preprint article is entitled *Pandemic Pivot: A Faculty Development Program for Enhanced Remote Teaching*. The preprint article has not been peer-reviewed.

Appendix

Faculty Comment Highlights from Surveys.
Survey Question: What was most useful from the workshop?

Changing my perception. I had no idea what backwards design was. The information on each module was no only helpful, it really changed how i can see teach and learn from the online environment.
I thought the daily emails with tasks and reminders were super useful to keep me engaged and on top of the work needed. The resources shared are fantastic and the showcase was helpful to get insight from others
Frankly I was surprised that the course spent so much time with scholarly work surrounding learning outcomes; I thought it was simply training regarding tech. VERY GLAD about the emphasis on learning outcomes, as we all aim to be as on-target with these with the remote and hybrid versions of our classes as possible. WELL DONE
I found talking to my colleagues on the discussion boards extremely helpful. The prompts forced me to put in writing some of my ideas which helped greatly as I plan the course.
I will now teach my modules differently (even when we are in-person), with clear modular LOs and better formative assessments. I also will be able to better engage the students in peer-to-peer learning.
I appreciated that the workshop made me produce tangible assignments, LOs, etc.
Getting to practice the Blackboard tools as if I were a student in my own class--blog, discussion board, Wiki.
The values and strategies it taught and the metacognitive component by which the course emulated all the values and strategies it taught.
the sense of camaraderie amongst the instructor and the participants~ ~ a great model for what we want to achieve in our classes~
Seeing examples of how to structure the class in Modules in Blackboard, including the types of content and materials that can be bundled together into a learning module. It emphasized how important it is to organize the class in a clear and easy to follow structure so that students can keep track of everything - especially when they will need to navigate so much content for all of their classes.
The integration of the tools into the course itself was most valuable. For example, using a blog, discussion board, wiki, all provided us with the experience of using the tools we might incorporate into our classes. The faculty showcase at the end was another example of us doing something we could adapt for use in our own classes.
Exposure to different tools and resources that will help with remote teaching. Taking it with colleagues in my department, so we could share our thoughts and ideas about our courses.
It helped me focus my thinking on some discrete areas of my courses, such as peer involvement and building community. It linked to some good materials on online teaching. And reminding us to focus on the student experience, and what they should learn, and working backward from there to design the course, was useful.
Exposure to literature that supported different pedagogies. Ability to practice what we learned.
The course was great. I liked in particular how it illustrated what it taught so that I have not only a conceptual understanding but also a physical model to remember, emulate, and experiment with. [Course facilitator] did a remarkable job designing the course, encouraging participation, inviting authenticity and creativity, and serving as a model instructor of online pedagogy.
I still believe that there may be more interactions in a face to face class, and that it's easier to cover more material in a face to face class. My responses have become more positive about online learning since learning about different approaches and techniques in RT102.

Faculty comment highlights from follow up survey (after faculty taught their fall 2020 remote course).

I received positive feedback from my students in course evaluations specifically regarding the LSM organization and remote delivery of my courses. They noticed that I had worked to redesign the course for the remote format this semester and that things ran smoothly.
The RT102 class definitely prepared me for the fall semester; aside from rubrics (instead I give detailed instructions and a checklist), I applied really everything I learned from the class.
I had a very positive experience this semester, and received lots of positive feedback from students. I used Blackboard for the first time and integrated learning goals from the first day, which helped me structure the course all the way through the final exam. I also used the online discussion board, but found that feature to be less useful. I'm going to continue to experiment with incorporating online discussion into remote learning classes.

The RT102 course was super helpful, especially on the practical components of running a course online. After reading my student reviews I am confident that students learned a lot, even with the online environment.
Thank you! It has changed my mind completely about how effective remote teaching can be— excellent course!
The collaboration and support were incredible. People with experience shared tips and tools. This fostered the kind of online environment instructors would want to replicate in their own courses.

Author details

Heather Leslie*, Alejandra Lizardo and Ashley Kovacs
University of San Diego, San Diego, United States

*Address all correspondence to: hleslie@sandiego.edu

IntechOpen

References

[1] Hechinger J, Lorin J. Coronavirus forces $600 billion higher education industry online: As the pandemic shutters campuses, schools scramble to provide distance education. *Bloomberg Businessweek.* 2020. Retrieved from: https://www.bloomberg.com/news/articles/2020-03-19/colleges-are-going-online-because-of-the-coronavirus

[2] Hodges C. et al. The difference between emergency remote teaching and online learning. *Educause Review*. 2020. Retrieved from: https://er.educause.edu/articles/2020/3/the-difference-between-emergency-remote-teaching-and-online-learning

[3] Institutional Research and Planning. Faculty Survey on Remote Teaching and Learning Results: Report prepared by Institutional Research and Planning June 2020. 2020

[4] Anderson LW. A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives. New York, NY: Pearson; 2000

[5] Mueller J. Authentic assessment toolbox. 2018. Retrieved from: http://jfmueller.faculty.noctrl.edu/toolbox/index.htm

[6] Wigging G, McTighe J. Understanding by Design. 2nd ed. Alexandria, VA: Association for Supervision and Curriculum Development; 2005

[7] Richardson JC, Maeda Y, Ly J, Caskurlu S. Social presence in relation to students' satisfaction and learning in the online environment: A meta-analysis. Computers in Human Behavior. 2017;**71**:402-417

[8] Griffiths R et al. OER at Scale: The Academic and Economic Outcomes of Achieving the Dream;s OER Degree Initiative. SRI International; 2020. Retrieved from: https://www.sri.com/publication/education-learning-pubs/oer-at-scale-the-academic-and-economic-outcomes-of-achieving-the-dreams-oer-degree-initiative/

[9] Mayer R. Multimedia Learning. 2nd ed. Cambridge, UK: Cambridge University Press; 2009

[10] Center for Applied Special Technology (CAST). Optimize individual choice and autonomy. n.d. UDL Guidelines. Retrieved from: https://udlguidelines.cast.org/engagement/recruiting-interest/choice-autonomy

[11] Blackboard, Inc. Blackboard announces winners of 2021 catalyst awards. *PR Newswire*. 2021. Retrieved from: https://www.prnewswire.com/news-releases/blackboard-announces-winners-of-2021-catalyst-awards-301318851.html

[12] Leslie H. Trifecta of student engagement: A framework for an online teaching professional development course for faculty in higher education. Journal of Research in Innovative Teaching & Learning. 2019;**13**(2):149-173. DOI: 10.1108/JRIT-10-2018-0024

[13] Ibrahim L. From survive to thrive: Using professional development to advance online teaching. Journal of Literacy and Technology. 2020;**21**(3):44-58

[14] Darsih E. Learner-centered teaching: What makes it effective? Indonesian EFL Journal. 2018;**4**(1):33-42

[15] Alexander B. Academia Next: The Futures of Higher Education. Baltimore, MD: Johns Hopkins University Press; 2020

[16] Galloway S. Post Corona: From Crisis to Opportunity. New York, NY: Portfolio; 2020

[17] Kelly D, Rebman C. Perception and acceptance of online education: Do online courses pass the muster? Issues in Information Systems. 2014;**15**(2):49-58

[18] Stout SK. Student-centric transformation. *Inside Higher Ed*. 2021. Retrieved from: https://www.insidehighered.com/views/2021/07/26/colleges-can-thrive-if-they-focus-less-business-models-and-more-students-opinion

Chapter 8

Synchronous Learning in Institutions of Higher Learning during COVID-19: Lessons from Developing Countries

Tinayeshe Shumba and Tunika Munkuli

Abstract

The coronavirus outbreak, known as COVID-19, is one example of a pandemic that the world is currently grappling with. The effects were disruptive in both developing and developed countries. The teaching and learning in Institutions of Higher Learning (IHL) in developing countries were not spared. The study focused on exploring the effects of synchronous teaching and learning and analysing how quality teaching and learning were achieved. An exploratory design study was used in the study. Data was collected using qualitative interviews. The study found that several IHL adopted synchronous teaching and learning. To ensure a smooth transition from face-to-face to online platforms, regular training must be offered to lecturers and students. Institutions of higher learning must lobby policymakers and IHL managers to fund ICT infrastructure in the colleges and universities for ease of adoption of a new method of teaching and learning.

Keywords: synchronous learning, accessibility, institutional support, student-readiness, student engagement

1. Introduction

The advancement of information and communication technology (ICT) in developing countries and the reduction of data costs have made synchronous teaching and learning possible. Synchronicity occurs simultaneously, and the interactions transpire without a time lag in real-time [1]. This indicates a very short lapse between interactions, as in the case of text-based instant messaging (IM) or short message service (SMS). Scholars describe synchronous learning as a real-time, instructor-led online learning event in which all participants are logged on simultaneously and communicate directly with each other [2, 3]. Synchronous learning is increasing its footprint in IHL as students demand flexibility in learning and delivering lessons [4]. Many scholars use different names referring to the same concept of teaching and learning on an online platform. The concept was described as remote learning [5], technology-enhanced learning [6], synchronous online learning [7], synchro modal

learning [8, 9], hybrid synchronous teaching [10] and synchronous hybrid [9]. The study used the term 'synchronous learning' to refer to online teaching and learning in real-time. Interactive features like annotation tools, polls, breakout rooms, video and screen sharing make teaching more interesting among facilitators and students. Synchronous learning focuses on real-time interactions, whilst asynchronous learning refers to the learning system that allows students to learn independently. The students benefit in several ways, including collaborating with other students in remote places. The study note synchronous learning engages students in real-time regardless of their different environmental locations. Online student engagement is described as the degree of interest, cognitive ability, attention, interaction, time, and effort that students in IHL show during synchronous learning [6]. Synchronous teaching and learning have gained momentum in IHL due to the prolonged lockdown measures that many governments implemented to curb the spread of the coronavirus. Several instructors in IHLs are now faced with the challenge of adopting a new method of teaching and assessing students' work online. The literature [11], notes that the lack of prior experience with synchronous online teaching and inadequate training are major sources of frustration among instructors and students.

2. Context of synchronous learning in institutions of higher learning

The context of synchronous learning in IHLs is shaped by the facilitation conditions these institutions provide, in addition to the cultures inherent to academic disciplines [12]. A plethora of evidence in the literature suggests that technological infrastructure and resources are directly and indirectly related to the adoption of synchronous learning in IHLs [13]. During COVID-19, IHL in South Africa moved their teaching approaches from face-to-face to synchronous learning. However, the challenges like poor connectivity and attendance during the lesson were noted. Asynchronous solutions were adopted to support synchronous learning and assist students unable to connect live lessons. The study found the poor network and high cost of data contributed to poor student engagement during online lessons. It was noted that some institutions delayed moving to synchronous learning due to the poor preparedness of instructors and the use of outdated institutional infrastructure. The lack of devices and user-friendly learning management systems like Blackboard, Microsoft Teams, and Zoom, among others, made it difficult for poorly funded IHL to implement change in the method of teaching and learning [14]. Improvements were noticed after some time as every institution tried hard to save the academic year.

3. Purpose of the study and research questions

Students' academic progression in IHLs during the COVID-19 pandemic was a great concern as it led to poor performance and high attrition rates among students. The scholar [15] found a lack of course material, online learning facilities, and a reduction in contact hours as obstacles that affected the pass rate and throughput rate in IHL. The researchers [16] concluded that some IHL are unaware of how to develop assessable online content and how to manage the synchronous learning environment. The study seeks to understand the impact of COVID-19 on IHL and identify challenges and lessons that can be drawn from implementing synchronous learning in IHL. The research question guiding the study is "*What are the effects of synchronous*

online teaching and learning methods in IHLs in developing countries?" The objectives of the study are to 1) Explore the impact of COVID-19 on synchronous teaching and learning in IHLs; 2) Identify the challenges and benefits of synchronous teaching and learning in IHLs, and 3) Make recommendations to support professional development in synchronous learning environment.

4. Literature review

In developed countries, synchronous online teaching and learning have been the norm for the past two decades. The synchronous delivery model was adopted as a tool to aid learning in institutions of higher learning instead of replacing face-to-face interaction [1]. The scholars analysed synchronous learning management systems (LMS) and recommended that interactive features that must be added to LMS include chat rooms, annotations, discussion forums, journals, wikis, break-out rooms and options for non-verbal gesture buttons [17]. The instructor's pedagogical approaches and readiness to adopt technology-integrated instructions ultimately influence instructor-student interactions during synchronous lessons [18]. Synchronous learning requires technologically aware and experienced facilitators to manage the LMS. In contrast with synchronous learning, the researcher [19] regards asynchronous learning as a situation where students access the learning material uploaded beforehand, in their own time. This type of learning has been the most commendable, especially for emerging countries where students struggle with network connectivity and internet access. However, asynchronous learning has disadvantages, including the possibility of students receiving delayed feedback on their enquiries. This frustrated students, and they ended up demotivated with the online teaching and learning approach. In the study, synchronous learning was affected by load shedding. IHL increased their capital expenditure by buying generators to back up power failure. The students could not join classes because of load shedding and poor network. Lecturers were not exceptions as they were affected too, compromising the quality of lesson delivery.

5. Synchronous online teaching and learning

Computer-mediated communication emerged in developed countries over two decades ago, but it is now prevalent in developing countries. Scholars distinguish synchronous and asynchronous teaching, depending on whether the interaction occurs in real-time [20]. Student engagement was found to be one of the most important aspects of enhancing quality teaching and learning [6]. Scholars call student engagement 'the holy grail', owing to its importance in academic success [21]. Synchronous teaching and learning promote student engagement compared to asynchronous teaching and learning. Synchronous online teaching and learning allow students and lecturers to interact meaningfully, ask questions and receive instant feedback [22]. Furthermore, synchronous learning allows students to engage by sharing their understanding of the content studied beforehand, both with other learners and with the instructor. This assists in clarifying concepts and eliminating any misconceptions about the subject matter, thereby promoting meaningful learning [23, 24]. Research [25] notes that educators have discovered the efficiency, ease of access and diverse collaborations offered by synchronous online teaching and learning that is likely to continue being an optional delivery method even after the relaxation of the lockdown measures.

6. Institutional support for synchronous online teaching and learning

Institutional support was found to be vital for learners in IHLs when transitioning from face-to-face to synchronous learning [26]. The researchers [27] who reviewed award-winning online institutions noted the importance of putting the educator on centre stage in designing, assessing and facilitating. The research made it clear that lecturers in IHLs must take ownership of teaching methods, technology, and content in the modules they facilitate. Module facilitators who received mentoring, technical support and training for software and hardware used in class were found to have higher institutional satisfaction than those who did not [28]. Several studies have shown synchronous online teaching and learning integration associated with technical and pedagogical support [29–31]. A shared vision championed by the teaching and learning management helps different technology among facilitators in IHL. This motivates lecturers to change quickly to the new method. The lack of shared vision [32] was the cause of confusion affecting the quality of teaching and learning in an online space.

7. Student accessibility and readiness

Previous studies have described students in IHL in different terms 'digital natives' [33], 'millennials' [28], the 'net generation' [34] and 'digital generation' [35]. An empirical study [36] confirms that most students had access to mobile phones, which they use for texting, participating in social media and engaging in synchronous learning. Nonetheless, students' awareness of technology is insufficient unless they are taught and trained to navigate LMS. Furthermore, students must develop a sense of ownership over their studies. Previous research noted limitations among young adults in using technology for educational purposes [37]. The World Bank noted poor internet access as making it difficult for students in developing countries to engage in synchronous learning. Synchronous online teaching and learning have challenges, and there have been recommendations for lecturers, students, and managers to improve learning in IHLs. Participants must connect using the right equipment; all participants must arrange their physical space to optimise visual and audio presentations; students must be allowed to introduce themselves online by opening webcams, chat with peers and teachers in real-time to augment their social presence [6, 25]. Facilitators are advised to know the background of their learners in terms of online interaction, connectivity, and engagement [38]. Facilitators and students must familiarise themselves with the functions of the learning management system. The need to embrace an online teaching and learning persona cannot be overemphasised. Lecturers must set ground rules with their students [38] to achieve a clear direction. The lecturers must take advantage of the features that promote online engagement, such as chat, short surveys and cold-calling techniques. The students must be accountable for managing their virtual online space. Developing a communication plan enables students to engage with their facilitator without experiencing challenges. The prior teaching experience was positively related to a teacher's general self-efficacy and attitude towards synchronous teaching and learning. The facilitators' perceptions of the student readiness for synchronous learning impact the design and facilitation of online courses [27]. The survey noted that physiological disabilities such as anxiety, depression and post-traumatic stress disorders cause significant barriers to learn in IHL. The research has noted that the number of students with

disabilities who are enrolled in IHL continues to rise [39]. Researchers [40] observed a trend in synchronous learning where opportunities for completing studies among students with disabilities are increasing. Universal design for learning principles was instrumental in enhancing the quality of the teaching and learning experience for all tertiary students [41]. The contributing factor is the delivery of content in multiple ways, enabling synchronous learning. Similar findings were noted in research [42] that argued students with disabilities are a diverse population who are challenged in many ways in terms of navigating online courses that do not cater for accessibility. Students with disabilities have different demographic characteristics, with differences in gender, socio-economic status, age, sexuality, culture and ethnicity. Institutions of higher learning must support these students by not focusing on their disability but on the whole person, in the same way, they do for able-bodied students.

8. Research methodology

The study used an exploratory approach to obtain participants' in-depth views and learning perceptions. The exploratory method assists in interrogating an area where little or no information about the phenomenon is available. Synchronous learning during the COVID-19 pandemic had not been researched in IHLs, especially in a developing state context, hence the current study's need. Data were collected from 25 respondents using an open-ended questionnaire administered to lecturers and students from IHL in the Limpopo province of South Africa. The survey and collected data from 15 students and 10 lecturers ensured a good representation of participants. Telephone interviews were utilised to probe responses. The open-ended questionnaire was emailed in advance to allow respondents to familiarise themselves with the questions ahead of the interview. This approach was cost-effective as the researchers incurred no travelling costs. Participants and the interviewer were less exposed to the risk of meeting COVID-19-positive individuals during the data collection process. Common themes in the study were identified using thematic analysis.

9. Findings and discussion

The survey uncovered crucial insights on optimising synchronous teaching and learning among the IHL lecturers and students during the COVID-19 pandemic. The descriptive statistics of respondents were analysed separately based on age, gender and academic qualifications. A total of 25 respondents were interviewed after receiving the questionnaire in advance. The results were analysed separately, i.e., lectures and students. Gender is a nominal data variable in the study, therefore measures like median, mean and standard deviation were not helpful for the paper. Out of 15 students who took part in the study, 60% were females, and 40% were males. The mean age of the entire group of participants, that is, lecturers and students, was 29 years of age and the median age was 26. The youngest participant was 19, whereas the eldest was 41. The data showed a deviation or dispersion from the mean to 10 years. In terms of qualifications, all respondents had qualifications ranging from higher certificates to degrees.

The study found changing to synchronous learning as the only option available to save the academic calendar under lockdown. A clear plan of action was shared with the stakeholders on moving to synchronous learning. Learning management system

pieces of training and support was given to both the lecturers and students on the use of technology prior to the transition and as it was made an ongoing activity depending on identified developmental areas. The ICT support includes devices given to lecturers and students who were not having gadgets. Slides and textbooks helped to support offline solutions activities.

The study found many challenges that negatively impacted the synchronous delivery of lessons, including lack of access to data, poor connectivity, inability to navigate effectively on the LMS, and minimised student engagement. Data access was one of the main challenges to South African students. The institutions of higher learning provided data packages to lecturers and students for them to engage effectively during lessons. Furthermore, it was found that some LMS were heavy on data usage, e.g., blackboard, as the data provided by the institutions was depleting very fast. Other institutions switch to LMS and use those that do not consume much data, like zoom, for synchronous learning.

The study found that many students could only join some of the scheduled synchronous sessions utilising the allocated data. They had to top data from their coffers, and the students from poor backgrounds were greatly affected as they could not afford to buy extra data. Affordability concerns made students choose sessions to attend and not to attend as a way of saving available data. The study found data challenges to lecturers having less impact as they were conducting lessons onsite and could afford to buy. They were able to maintain a presence in the synchronous learning environment. The other finding was poor sound quality during the lessons. Some students complained that lecturers were not audible enough during online classes and, at times, background noises disturbed the learning process. The use of wireless speakers, e.g., Jabra speakers, solved this challenge later when they were bought to support learning. In addition, half of the students who attended had no access to laptops hence they were using smartphones, but they could not be used to type assignments and other online submissions. The instructions had to open campus over the weekends and increase machines on the computer laps to accommodate students who wanted machine use. The research notes that some gadgets were not supporting the LMS at different institutions, which exacerbated the problem, e.g., some smartphones made it challenging to view projected slides and could not access features needed to participate during the lessons. The challenge of network connectivity was more on students who stay in remote areas. About half of the students interviewed indicated network connectivity issues which compromised their studies. One student indicated a lack of network signals in the area where she resided and would occasionally travel some distance to get network connectivity so that she could catch up. Lack of personal space to attend synchronous lessons was a big obstacle. Family members were disturbed during synchronous learning and listened to recordings after the lessons. This negatively affected student engagement as they would be on mute all the time so that background sounds from their environment would not interfere with the online sessions and only relied on the chat option. In modules which required calculations, it was found to be challenging to master the concepts. Lecturers end up organising booster sessions to revise and reinforce the concepts.

Some students cited that joining synchronous lessons whilst watching TV, this compromised learning. This speaks to students' readiness to adopt synchronous teaching and learning methods. Institutions are supposed to continuously offer support to develop self-responsibility towards their studies to ensure effective and deeper learning. From lecturers' side, one of the major concerns was the lack of engagement by most students during online sessions. Lecturers posed questions during the

discussion, and most students were not forthcoming in interacting with their lecturers and peers. One lecturer indicated that it was one of the most difficult situations to deal with when questions were met with deafening silence in a lecturing career. When the lecturer called out students' names to contribute, they remained mute. The lecturers could not agree on nonverbal cues to check if students were following. Lecturers mostly ended up talking, failing to promote student engagement and interactive participation.

10. Conclusions and recommendations

Based on the findings from the study, it is crucial to note that synchronous learning has become a necessity in IHL and will shape future learning programmes. The study recommends that policymakers and administrators in IHL increase the budget meant for teaching and learning to cover additional ICT infrastructure and personnel who needs to sustain synchronous learning. The study view lecturers and students as the cornerstones of synchronous learning, hence proper orientation is recommended every time the new academic year starts or is deemed necessary. New employees to the organisation must undergo a rigorous orientation to impact skills, enabling them to use the LMS without a challenge. The study recommends all IHLs invest in ICT infrastructure to effectively manage the synchronous teaching and learning space. The investment must be made in many forms, like acquiring new equipment, software and training staff on managing the new learning management systems. The teaching and support staff must be given access to ICT tools and be trained on using the learning management system (LMS) continuously. The training must be tailored to address the needs of the students, academics and other stakeholders involved. The students must be taught how to use the LMS to submit assessments, log a query, register, access student material, participate in lessons, and track financial statements, among other things. The study recommends training students on time management and managing learning activities whilst engaging in synchronous and asynchronous learning. The study noted that adopting the synchronous teaching and learning approach in IHLs is a technical and pedagogical and instructional challenge. It is recommended that enough preparation from lecturers, learners and other stakeholders is a prerequisite to ensure the effective implementation of the synchronous teaching and learning model. The study recommends cross-collaboration among teams at an IHL. The team could comprise of lecturers, content developers, ICT teams, the operations department, and sales teams to enable the success of the synchronous learning model. The study noted that moving lecturers and students out of the traditional classroom, i.e., face-to-face learning, must be viewed as a pedagogical transformation that requires the rapid mobilisation of resources among different stakeholders, colleges and universities. Synchronous teaching and learning, therefore, require lecturers to be flexible and adaptable in dealing with unanticipated circumstances, e.g., system failure and load shedding. The study recommends an alternative strategy to be in place to enable engagement with students who fail to attend a synchronous learning session. The study recommends that lecturers record their online sessions to help students who fail to engage synchronously access the learning activities conveniently. Asynchronous learning becomes an alternative approach to complement synchronous engagement. Asynchronous engagement tools like blogs, listservs, wikis, google documents, and voiceovers improve student engagement online. The synchronous tools, which include text-based charts, two-way video and audio conferencing, web conferencing,

interactive whiteboards, real-time-sharing documents, instructor-led floor control, viewable class list and participation meters, assist in making synchronous learning more real and enjoyable. The challenges in synchronous teaching and learning, including integrating technology into teaching practices and communication channels, negatively affect student engagement [6]. The challenge of monotony in synchronous teaching and learning was found to be taking place when the LMS is used as a one-way channel of passing information to students. IHL must make use of virtual private networks (VPN) connections at their campuses to carb network problems. The IHL must ensure that its facilitators and course instructors have professional teaching qualifications and teaching experience. Those falling short must undergo some training on online teaching and learning to ensure success in delivering the synchronous teaching and learning model. Lecturers are recommended to enhance interaction with students using the virtual whiteboard and grouping students into breakaway rooms during the presentation to enable them to work in smaller groups. The lecturers must allow students to post their activities, share hyperlinks and make some presentations. Whiteboards were found to act as discussion conduits as they encourage the scaffolding of concepts in the classroom. Synchronous learning was found to be cost-effective, allows peer discussion, stimulates critical thinking and promotes cognitive engagement among innovative twenty-first students. The study recommends a cross-national study among public and private institutions of higher learning to see the impact of synchronous learning during the COVID-19 pandemic.

Author details

Tinayeshe Shumba[1*] and Tunika Munkuli[2]

1 Faculty of Commerce, IIE Rosebank College, South Africa

2 IIE Rosebank College, South Africa

*Address all correspondence to: tinashumba2000@gmail.com

IntechOpen

References

[1] Cheung A. Synchronous online teaching, a blessing or a curse? Insights from EFL primary students' interaction during online English lessons. System. 2021;**100**(1):1-13

[2] Riwayatiningsih R, Sulistyani S. The implementation of synchronous and asynchronous E-language learning in Efl setting: A case study. Jurnal Basis. 2020;**7**(2):309-318

[3] Jennings A et al. Is the jury still out on "blended learning"? In: Web Information Systems and Technologies. Springer; 2007;**1**(1):355-366

[4] Francescucci A, Foster MK. Virtual interactive real-time instructor-led (VIRI) learning: The case of synchronous blended learning in introductory undergraduate course. Journal of Higher Education Theory & Practice. 2014;**14**(2):36-45

[5] Hash PM. Remote learning in school bands during the COVID-19 shutdown. Journal of Research in Music Education. 2021;**68**(4):381-397

[6] Khan RA et al. Twelve tips to enhance student engagement in synchronous online teaching and learning. Medical Teacher. 2021;**43**(10):1-6

[7] Bower M et al. Design and implementation factors in blended synchronous learning environments: Outcomes from a cross-case analysis. Computers & Education. 2015;**86**:1-17

[8] Bell J, Sawaya S, Cain W. Synchromodal classes: Designing for shared learning experiences between face-to-face and online students. International Journal of Designs for learning. 2014;**5**(1):68-82

[9] Butz NT, Stupnisky RH. A mixed methods study of graduate students' self-determined motivation in synchronous hybrid learning environments. The Internet and Higher Education. 2016;**28**:85-95

[10] Bülow MW. Designing synchronous hybrid learning spaces: Challenges and opportunities. In: Gil E, et al., editors. Hybrid Learning Spaces. Springer; 2022. p. 135-163

[11] Moser KM, Wei T, Brenner D. Remote teaching during COVID-19: Implications from a national survey of language educators. System. 2021;**97**(1):1-15

[12] Seufert S, Guggemos J, Sailer M. Technology-related knowledge, skills, and attitudes of pre-and in-service teachers: The current situation and emerging trends. Computers in Human Behavior. 2021;**115**(1):1-7

[13] Granić A, Marangunić N. Technology acceptance model in educational context: A systematic literature review. British Journal of Educational Technology. 2019;**50**(5):2572-2593

[14] Muthuprasad T et al. Students' perception and preference for online education in India during COVID-19 pandemic. Social Sciences & Humanities Open. 2021;**3**(1):100101

[15] Sintema EJ. Effect of COVID-19 on the performance of grade 12 students: Implications for STEM education. Eurasia journal of mathematics, science and technology. Education. 2020;**16**(7):em1851

[16] Stewart C, Wolodko B. University educator mindsets: How might adult constructive-developmental

theory support Design of Adaptive Learning? Mind, Brain, and Education. 2016;**10**(4):247-255

[17] Kohnke L, Moorhouse BL. Facilitating synchronous online language learning through zoom. RELC Journal. 2020;**53**(1):296-301

[18] Li L-Y, Tsai C-C. Accessing online learning material: Quantitative behavior patterns and their effects on motivation and learning performance. Computers & Education. 2017;**114**:286-297

[19] Agiomirgianakis G, Lianos T, Tsounis N. Returns to Investment in Distance Learning: The case of Greece. International Business Research. 2019;**12**(3):94-100

[20] Smith PJ, Murphy KL, Mahoney SE. Towards identifying factors underlying readiness for online learning: An exploratory study. Distance Education. 2003;**24**(1):57-67

[21] Sinatra GM, Heddy BC, Lombardi D. The Challenges of Defining and Measuring Student Engagement in Science. Taylor and Francis; 2015;**50**(1):1-13

[22] Simonson M, Zvacek SM, Smaldino S. Teaching and Learning at a Distance: Foundations of Distance Education. 7th ed. 2019. pp 1-13

[23] Higley M. Advantages of Using both Synchronous and Asynchronous Technologies In an Online Learning Environment. Oct 2013

[24] Lin X, Gao L. Students' sense of community and perspectives of taking synchronous and asynchronous online courses. Asian Journal of Distance Education. 2020;**15**(1):169-179

[25] Sharp EA et al. Optimizing synchronous online teaching sessions: A guide to the "new normal" in medical education. Academic Pediatrics. 2021;**21**(1):11-15

[26] Naylor D, Nyanjom J. Educators' emotions involved in the transition to online teaching in higher education. Higher Education Research & Development. 2020;**20**(6):1236-1250

[27] Martin F, Stamper B, Flowers C. Examining student perception of readiness for online learning: Importance and confidence. Online Learning. 2020;**24**(2):38-58

[28] Howe DL et al. Differences in nursing faculty satisfaction teaching online: A comparative descriptive study. Journal of Nursing Education. 2018;**57**(9):536-543

[29] Calderón A et al. An integrated blended learning approach for physical education teacher education programmes: Teacher educators' and pre-service teachers' experiences. Physical Education and Sport Pedagogy. 2021;**26**(6):562-577

[30] Holbrey CE. Kahoot! Using a game-based approach to blended learning to support effective learning environments and student engagement in traditional lecture theatres. Technology, Pedagogy and Education. 2020;**29**(2):191-202

[31] Scherer R et al. Profiling teachers' readiness for online teaching and learning in higher education: Who's ready? Computers in Human Behavior. 2021;**118**:106675

[32] Tondeur J et al. Gender differences in the ICT profile of university students: A quantitative analysis. DiGeSt. Journal of Diversity and Gender Studies. 2016;**3**(1):57-77

[33] Prensky MR. Teaching Digital Natives: Partnering for Real Learning. Newbury Park: Corwin Press; 2010

[34] Tapscott D, Williams AD. Innovating the 21st-century university: It's time. Educause Review. 2010;**45**(1):16-29

[35] Ali W. Online and remote learning in higher education institutes: A necessity in light of COVID-19 pandemic. Higher Education Studies. 2020;**10**(3):16-25

[36] Jesse DE, Dewees C, McDowell WC. A mini-midwifery business Institute in a Midwifery Professional Roles Course: An innovative teaching strategy for successful career planning and business management of practice. Journal of Midwifery & Women's Health. 2015;**60**(1):75-82

[37] O'Sullivan JW et al. Verification bias. BMJ Evidence-Based Medicine. 2018;**23**(1):54-55

[38] Berry S. Teaching to connect: Community-building strategies for the virtual classroom. Online Learning. 2019;**23**(1):164-183

[39] Patton LD. Disrupting postsecondary prose: Toward a critical race theory of higher education. Urban Education. 2016;**51**(3):315-342

[40] Basham JD et al. Equity matters: Digital and online learning for students with disabilities. In: James D, Basham MS, William S, Kelsey R, Ortiz MS, and SJS. Mary FR, editors. University of Kansas Center on Online Learning and Students with Disabilities. 2015. pp. 1-152

[41] Hollingshead A et al. Engagement for students with severe intellectual disability: The need for a common definition in inclusive education. Inclusion. 2017;**5**(1):1-15

[42] Burgstahler S. Opening doors or slamming them shut? Online learning practices and students with disabilities. Social Inclusion. 2015;**3**(6):69-79

Chapter 9

Higher Education: What does the Neurocognitive Evidence Say for Decision-Making and Complex Problem Solving?

Ximena Paz Martinez Oportus and Alex W. Slater

Abstract

Higher education aims to train suitable professionals for a globalized context and develop transversal skills that allow them to function successfully in society with the current demands. Higher education includes the entry of young people from 18, with professional careers lasting at least 4 to 5 years, graduating at approximately 23 years of age. Cognitive neurosciences show that brain maturation of the prefrontal lobe (associated with executive functions, such as decision-making, planning, and cognitive flexibility) is completed around 25 years of age, continuing with the myelination of the various processing networks. Thereby, raises the question of how to approach the resolution of complex problems that demand a battery of technical, procedural, attitudinal, and ethical implications, among others, in a brain that is still developing, still dealing with the regulation of its characteristic emotional states. At this stage of the life cycle. The chapter will allow us to reflect on the scaling of these competencies based on neuroscience to suggest methodologies that will enable, depending on the entry profile of the students, to address specific methods.

Keywords: higher education, neuroeducation, executive functions, problem solving, didactics

1. Introduction

Students who enter higher education are in emerging adulthood (from now on EA), a culturally constructed evolutionary period, ranging from 18 to 29 years of age, in which students are in the majority pursuing higher education in institutes or universities in most countries.

Five general characteristics of the stage in this period are defined, with an emphasis on EA [1]:

1. A period of exploration.

2. A term to build identity.

3. A period to feel between adolescence and adulthood.

It is in this educational stage where, from curricular planning, students must make decisions and solve complex problems associated with methodological, didactic, and evaluation strategies during this period. Based on this reality, the question arises, how to generate the scalability of the learning results related to these two points, understand and attend to the neurocognitive period in which our students find themselves? We know that the competency scalability models have been studied and defined, but do we know the methodological strategies that reliably determine the achievement of the indicators?

This research also seeks to visualize this biological and social issue in the same document to generate the approach to these questions about the methodological strategies used to achieve skills. It is independent of the scalability of the skill domain in which it is located, such as being a guide to understand the faith.

2. Emerging adulthood and executive functions

The executive functions (from now on, EF) are developed through sequencing and with intervals. Some processes are carried out earlier than others and in different periods of the life cycle [2]. During the EA process, the EF presents development, potentiation, and changes that facilitate the survival of the individual. The executive functions are fundamental for achieving goals since they coordinate and organize basic cognitive processes, such as memory and perception, required for purposeful behavior [3].

EF are composed of different abilities related to the brain's prefrontal areas. The development of these is extensive in the individual's life cycle, beginning in childhood until adulthood [4]; in this course, their effect takes place throughout childhood and adolescence, reaching a peak in early adulthood. In this way, the interaction between the individual and the environment influences prefrontal maturation, allowing the consolidation of the neural networks that support executive functioning [5]. These networks continue to develop until adulthood when our student is already growing in the world of work.

3. EF as complex cognitive functions

Admission to higher education and university life requires that students self-regulate behaviors and emotions, decision-making, planning, and design strategies to be protagonists of their training process. In addition, students migrate to another institution, with other requirements and adaptation needs arising. According to Luria [6], for the development of EF, the maturity of the prefrontal lobe is required to develop even the monitoring of their learning [7]. This is how higher education students in the EA period do not have the full development of their EF and face a series of biopsychosocial factors that impact their understanding and interpretation of the world.

Various investigations focus on the differences in academic performance according to the degree of development of cognitive functions, evidencing that individuals who have difficulties in their development decrease their performance in tests that require

working memory, planning, and monitoring [8]. However, most of this evidence is carried out in children, with the most remarkable diversity in neurocognitive development due to various biopsychosocial variables that make it more quantifiable. Furthermore, these highly complex cognitive functions develop as the individual grows and is exposed to challenges that allow them to respond in search of survival.

This point is highly relevant since young people who still need to gain the skills of emotional or thought regulation will find it challenging to achieve a transcendental process in higher education that is significant for their professional development [9]. Once these self-regulation skills have been developed, we could think about the success of problem-solving and, as the management of disciplinary and interdisciplinary concepts progresses, the correct escalation to the resolution of complex problems.

Why is emotional regulation so relevant? What happens when this function needs to be adequately developed? Emotional regulation positively impacts the training process, determining that the student can redirect ideas, behaviors, and knowledge since the attentional circuits remain alert to the task. Still, at the same time, they are eager for more information from the environment, filtering what is essential to the process. This does not happen when the student is in an unregulated stressful and emotional state, which promotes the activation of the amygdalin zone and primary responses, such as fight, freeze, or flight, which hinders the teaching-learning process in the entire context.

The question arises as to how we develop this crucial executive function before promoting skills of high metacognitive value, such as solving complex problems. Under this prism, the need to reinforce self-knowledge and the recognition of emotions becomes crucial in developing transversal competencies as part of the navigation chart toward solving complex problems. This is reinforced by the fact that from 2020 to date, most of our students have been connected to screens, which have various impacts already known by cognitive neurosciences, one of which is crucial in post-development.

Pubertal are mirror neurons and social cognition. Understanding this as a humanizing function of anthropological value is part of the subjective and intersubjective construct of social construction and, therefore, of solving problems with collective impact.

As a pedagogical strategy, the empathic approach assumes that the educational phenomenon implies emotional transfer, and not only conceptual recognition of the other, but also considering observational learning to enable formative processes in the context of recognizing the other in their existence. Research suggests that this process also impacts verbal and nonverbal language expression and, at the brain level, promotes insular activation of emotional interoceptive mapping.

Recalling these EA, we know that in this population, there is a state of sleep debt that impacts student performance and an irregular sleep-wake cycle that affects metabolic and hormonal circadian processes that impact memory the next day [10, 11].

This set of antecedents and the absence of pedagogical strategies that impact the developing neurocognitive processes worsens the academic performance indices and exacerbates the dropout rates in higher education—in the long term, generating more significant frustration in the young population and, with this affecting the mental health of a significant percentage of the population.

4. Resolution of complex problems and decision-making

Problem-solving is part of systems thinking; it must be operational to understand and model the solution. This problem-solving determines the mobilization of a wide

range and diversity of knowledge and skills. Since there are divergences in implemented methodologies to solve problems and challenges, the student is expected to be provided with a thought structure that can be adapted to each process. At this point, decision-making begins as a fundamental part of FE.

However, the evidence suggests facilitating or inhibiting the processes, depending on the degree of emotional regulation that the individual possesses.

There is great diversity in how people regulate their thoughts and actions. Despite this, the mechanisms underlying these differences in autoregulatory processes are unknown [12]. Various studies make it possible to define and determine that the development of these EF in children and adolescents can be enhanced since the differences are evident. However, it is difficult in young or AD individuals because standardized tests do not allow for intersubjective analysis or measurement of the stress level experienced by the individual with whom they are initially tested.

Under psycho-pedagogical models and learning theories, questions related to this topic can be answered, but are the theories comparable in adult individuals? The more likely it is that each stimulus in the environment promotes the development of new connections. But what kind of stimuli? For example, can an individual with low self-concept or empathy development, and therefore, low social skills promote adequate emotional self-regulation as central EF.

We know that reading favors attention, cognitive flexibility, monitoring, and semantic memory; writing allows the development of planning, inhibitory control, and follow-through (when evaluating spelling); and mathematics participate in working memory and logical thinking. However, in our higher education classrooms, we have digital native students who do not use manual writing, do not need spell checking since it is automated, and many mathematical processes are solved with technology.

When new questions arise, it is then to generate processes and transformation of the school and of higher education that allow student-centered learning to capture and take charge of the profiles and abilities of the new generations. Moreover, when we indicate skills, we refer to skills of the technical dimension (knowledge or knowledge), the methodological (know-how or the ability to apply knowledge), the participatory (knowing how to be), and mainly, the personal (knowing how to be and know how to live together).

It is then part of the social and ethical responsibility of teachers and institutional policies to understand that higher education institutions not only train professionals but also train people who must be agents of social change.

5. Higher education and its possibility of transforming

We know that solving complex problems requires developing critical thinking, so that students in an environment bombarded with information can discriminate valuable data from those that are not useful while using creativity to find solutions. However, these teaching-learning ecosystems must be consistent with the individual's neurobiological stage of development.

It is, therefore, necessary to provide students with tools to perform successfully in life and skills related to adaptability and resilience in the face of changes currently taking place at a political, scientific, economic, cultural, and social level. The achievement of critical skills to achieve these objectives determines broadening the training horizons far beyond what happens within the university, either virtually

or face-to-face, expanding the limits of strictly curricular training and favoring interdisciplinarity.

In addition, it is essential to highlight how transversal skills are understood and how they are being developed in the curriculum and within the hidden curriculum, which nourishes and reinforces dominant ideas and belief systems in each institution. Therefore, it underlies all educational experiences. This concept encompasses the interpersonal relationship of teachers, the expectations and trust they have with students, taking into account affectivity, interest, empathy, and other relevant soft skills. It must be gradually transferred to higher education to generate contention and joint construction of knowledge. Therefore, it refers to the immersion of the dialogue in the formative process of higher education, facilitated by the teacher [13].

It is how students must have tools to achieve decision-making in safe contexts and be prepared for it to gradually adapt to the changes that will occur once they go out into the world as professionals in various areas.

The need arises to have guidelines that guide the student and facilitate the adaptation process to arouse their curiosity and motivation and inspire that the process is genuinely transformative and that the educational process extends beyond the traditional classroom.

For these guidelines to have an impact, our focus must be on the teachers, professors, and collaborators, who participate in the educational process, creating an ecosystem that promotes natural and significant change. Furthermore, an ecosystem that promotes systemic thinking is given because global transformations related to the arts, science, and technology permeate society as a unit. Therefore, it is also urgent to rethink and observe the emerging and coexisting phenomena, so that through the educational process, it is an interconnected and interrelated network that impacts the lives of individuals at all its edges and can be analyzed.

Systemic thinking through methodological strategies, which must be connected with the socio-emotional skills of students in EA, gradually promoting all EF, where the student feels safe and protected, and giving room for error as a crucial methodology in teaching. Feedback on the didactic and evaluation process.

6. Methodological proposals

In this analysis, it will be crucial to use strategies that allow the development of research and creation and where the student feels safe from making a mistake as a fundamental part of the training process. On the other hand, training instances where students emotionally connect promote social interaction, cognition, and self-concept. Furthermore, finally, didactic strategies, where the student is not only the protagonist or an active participant in his training process but also projects himself in the first person when creating the memories to activate the attentional networks continuously.

It is suggested to consider the following:

- Escalation of competencies declared and known by the student.
- Didactic strategies, where the student intervenes as a protagonist.
- Evaluative strategies, according to the didactic strategy.
- Leave space for error

- Leave protected times for facilitation and feedback by peers and by the teacher.
- Establish great dilemmas and challenges spaced in "trigger challenges" that allow progress toward the final goal.
- That the challenges impact society or the collective in such a way that they are transformative for students, and allow them to give meaning to what they do.
- Provide tools for students to contact the referents in the various areas necessary for resolving specific problems.

	Problem-based or project-based learning PBL	**Challenge-based learning CBL**	**Inquiry or artistic creation-based learning icBL**	**Service learning**	**Simulation-based learning**
Knowledge (Verbs Associated with)	Recovery comprehension analysis app	Comprehension analysis app metacognition self-regulation	Comprehension analysis app metacognition self-regulation	Comprehension app metacognition self-regulation	All taxonomy will depend simulation type
Learning strategy description	Students exposed to situation known and a solution is demanded or its implementation within a framework stipulated. fictional or real	Students exposed to situation known and a real solution is demanded or concrete and contextualized action.	Students exposed to manufacturing situation of a guided investigative process and/or creation artistic curated that demands conclusions of the process or execution of work.	Students perform disciplinary interventions, multidisciplinary or interdisciplinary, and with this are linked to society.	Students face situations of simulation solving a Simulated situation.
Learning strategies examples	Math problem-solving. Generation of design projects. Robotics/home automation projects. Elaboration of models. Fictitious cases in human or animal health.	Resolution of real problems in real context. Design Thinking Challenges Real cases of human or animal health. Real cases that impact some SDG. Collaborative online. International learning.	Disciplinary investigations. Interdisciplinary research. Artistic creation in all fields.	Field interventions. Social voluntary jobs.	Clinical simulation. Modeling software. Decision-making. Role plays. Business games.
Teacher role	Facilitator or guide	Coach or consultant	Coinvestigator or Cocreator	Tutor	Facilitator and modeler

Table 1.
Proposal of methodological strategies.

	Process	**Product/result**	**Self-learning self-appraisal**	**Peer evaluation**
Example	Portfolios Observation Forms Satisfaction Questionnaires Rubric	Checklists Matching Guidelines Document analysis Demonstrations or tests	Questionnaire that guides Reflection Base on Portfolio or Rubric	Questionnaire that guides Reflection Base on Portfolio or Rubric

Table 2.
Proposal of evaluative strategies.

- Guide the investigative process.
- Systematize the process through specific indicators that allow us to monitor and simultaneously continue.
- That the student knows that the teacher or facilitator trusts his potential.

Strategies are recommended that, through their standardization of processes, not results, allow feedback to the teacher with greater precision, such as design thinking and even mindfulness, when working with emotional intelligence and self-regulation.

We propose the following tables of methodological strategies (**Table 1**) and evaluation strategies (**Table 2**).

Regardless of the methodological strategies, we can propose, we cannot leave the well-being of students aside as a fundamental part of their understanding of the world, the development of resilience, and self-concept. It is the basis of the importance of education for humanity. Well-being is not only the result of it, but it is necessary to conceive it in the process of it. Well-being and education must go together; these are alchemies of the life of the human being in each stage of his development, and all experience is vivid in his interpretation of reality. Generating a training process that promotes positive psychological states, such as resilience associated with well-being, improves performance in work and academic environments [14].

It could be part of micro-curricular or extracurricular interventions or immersed in the hidden curriculum we mentioned earlier.

They are ensuring that the strategies are formative and summative, according to the methodology and didactics used, and that allows continuous feedback to students.

7. Conclusions

The EA is determined in a stage of neurodevelopment, where even executive functions are strengthened, depending on emotional management influenced by the biopsychosocial context of this life cycle age. That is why generating strategies that facilitate, guide, and improve decision-making with a defined path and promote the resolution of complex problems in a controlled environment will allow the student greater comfort at the time of the training process and security. Understand that there is room for error and feedback on this scaling of abilities and skills.

Regarding the mechanisms that will allow the enhancement of the competencies associated with the resolution of complex problems, there are not only

methodological ones (for which we identified the main development guidelines) but also some processes that would allow students to enhance the development of their skills. This is because it improves their well-being, and thus, reduces the risk of mental health disorders.

It would be prudent for curriculum development activities to mix interdisciplinary activities. This could be associated with methodologies of problem-solving processes, project generation, challenge-based learning, research, service learning, and simulation; but is necessary that allows the student to correctly manage their time to favor protective environments of well-being, motivation, and inspiration toward the goal. This is not new; what we can rescue is that it is known that there is evidence, as previously highlighted, of the hours of rest and sleep and their relationship with the circadian hormonal cycles; however, the schedules in most of the academic programs begin first thing in the morning. These programs were formulated for the teacher, forgetting, in a certain way, that it is the teacher who is the one who facilitates and the student who generates knowledge.

We have many opportunities to make a change that means more than curricular or methodological differences.

Acknowledgements

Thanks to the Universidad Mayor for constantly promoting an improvement in the training process of its students.

Thanks to Saint Rose School for supporting the achievement of this publication, which also promotes a constant change in the training strategies of young people of diverse cultural imprints to generate a transformative educational process that manages to expand outside the classroom.

Conflict of interest

The authors declare no conflict of interest.

Author details

Ximena Paz Martinez Oportus* and Alex W. Slater
Dirección Innovación Academica, Universidad Mayor, Santiago, Chile

*Address all correspondence to: ximena.martinez@umayor.cl

IntechOpen

References

[1] Barrera-Herrera A, Vinet EV. Adultez Emergente y características culturales de la etapa en universitarios chilenos. Terapia psicológica. 2017;**35**(1):47-56. DOI: 10.4067/S0718-48082017000100005

[2] Fonseca Estupiñan G, Rodríguez Barreto L, Parra PJ. Relación entre funciones ejecutivas y rendimiento académico por asignaturas en escolares de 6 a 12 años. Revista Hacia la Promoción de la Salud. 2016;**21**(2):41-58. https://www.redalyc.org/articulo.oa?id=309149631007

[3] Welsh MC, Friedman SL, Spieker SJ. Executive functions in developing children: Current conceptualizations and questions for the future. In: McCartney K, Phillips D, editors. Blackwell Handbook of Early Childhood Development. Blackwell Publishing; 2006. pp. 167-187. DOI: 10.1002/9780470757703.ch9

[4] Finegood ED, Blair C. Poverty, parent stress, and emerging executive functions in young children. In: Deater-Deckard K, Panneton R, editors. Parental Stress and Early Child Development: Adaptive and Maladaptive Outcomes. New York: Springer; 2017. pp. 181-2017. DOI: 10.1007/978-3-319-55376-4_8

[5] Diamond A. Why improving and assessing executive functions early in life is critical. In: Griffin JA, McCardle P, Freund L, editors. Executive Function in Preschool-age Children: Integrating Measurement, Neurodevelopment, and Translational Research. Washington: American Psychological Association; 2016. pp. 11-43. DOI: 10.1037/14797002

[6] Manga D, Ramos F. El legado de Luria y la neuropsicología escolar. Psychology, Society & Education. 2011;**3**(1):1-13

[7] Rojas-Barahona CA. Funciones ejecutivas y educación. Comprendiendo habilidades claves para el aprendizaje. Santiago de Chile: Ediciones UC; 2017

[8] Visu-Petra L, Stanciu O, Benga O, Miclea M, Cheie L. Longitudinal and concurrent links between memory span, anxiety symptoms, and subsequent executive functioning in young children. Frontiers in Psychology. 2014;**5**:443. DOI: 10.3389/fpsyg.2014.00443

[9] Diogo B-L, Nancy L-M, Carlos R-G. Las Funciones Ejecutivas Del Lóbulo Frontal Y Su Asociación Con El Desempeño Académico De Estudiantes De Nivel Superior. Rev Ecuat Neurol. 2018;**27**(3):51-56

[10] Yanongo K, Valda LT, Mesa LB. Importancia del sueño en los procesos de aprendizaje y memoria para los estudiantes universitarios/Importance of sleep in learning and memory processes for college students. Ciencia & Conciencia. 2020;**3**(1-12)

[11] Payne JD, Tucker MA, Ellenbogen JM, Wamsley EJ, Walker MP, et al. Memory for semantically related and unrelated declarative information: the benefit of sleep, the cost of wake. PLoS One. 2012;**7**(3):e33079

[12] Miyake A, Friedman N. The nature and organization of individual differences in executive functions: Four general conclusions. Current Directions in Psychological Science. 2012;**21**(1):8-14. DOI: 10.1177/0963721411429458

[13] Vázquez Recio R, López Gil M. y Calvo-García, G El currículum oculto del fracaso escolar y del abandono educativo temprano. Investigación en la Escuela, 2019:**98**:16-30

[14] Salanova M, Schaufeli W, Martínez I, Bresó E. How obstacles and facilitators predict academic performance: The mediating role of study burnout and engagement. Anxiety, Stress & Coping. 2010;**23**(1):53-70

Chapter 10

Experience-Based Reflections on the Blended Learning Pedagogical Approach in Higher Education

Kirpa Chandan, Carmel Kealey, Patrick Timpson and Brian Murphy

Abstract

This chapter reflects upon the blended learning approach involving the delivery of a work-based, competency-focused programme in higher education. Based on their experience, the authors present the various approaches taken to deliver an optimal blended model for this programme type in the domain of Hearing Aid Audiology. Synchronous and asynchronous online learning are appraised and strategies to encourage learner engagement are explored. Advantages and limitations of the blended approach are considered, including the external factors which can influence outcomes in blended programmes. The chapter also discusses how the rapid, unplanned, upskilling of a high percentage of academic staff to deliver online programmes during the COVID-19 global pandemic has resulted in a cohort of highly experienced academics now proficient in online delivery. This upskilling has contributed to more efficient online delivery in the post-pandemic era. The impact of this upskilling of both the learners (through increased digital literacy) and academics has created an educational ecosystem with more universities embarking on the delivery of blended learning programmes or fully online programmes. This positive outcome in the post-pandemic era may have an impact on the future delivery of programmes in the WBL space, adopting a blended learning approach, and incorporating online learning.

Keywords: work-based learning, healthcare, blended learning, online learning, course design adaptation

1. Introduction

This chapter explores the adoption of a blended learning mode of delivery for a part-time programme with work-based learning (WBL) as a core component. The blended learning approach contrasts to the traditional, face-to-face, pedagogical medium of delivery. The experiences of the authors when designing and delivering this type of programme will be explored. The authors provide an overview of some of the decisions made, the strategies applied, the successes and limitations of the model employed. The chapter also discusses the impact of blended learning on programme design involving WBL orientated programmes. This discussion is set in the context

of a new, emerging educational landscape of curriculum development in the post-pandemic COVID-19 era. The chapter concludes with a discussion of how this model may be altered and applied to other Allied Health Sciences type programmes incorporating WBL.

2. Case-study: remodelling a part-time programme to incorporate a blended learning mode of delivery

The chapter is set in the context of a specific case-study which involves the development of a Higher Certificate in Science (HC Sc) in the domain of Hearing Aid Audiology. The programme was delivered at a Higher Education Institute (HEI) in the Republic of Ireland (ROI). The National Framework of Qualifications (NFQ) is a 10-level system used to describe qualifications in the Irish education and training system. The NFQ shows how General Education Awards, Further Education and Training and Higher Education Awards are mapped against the 10 levels of the framework. Under the NFQ, a Higher Certificate (HC) is aligned as a Level 6 programme. The HC aligns to Level 5 under the corresponding European Qualifications Framework (EQF). The EQF [1] supports mobility across the EU and allows qualifications attained in any EU country to be classified and organised into an eight-level system. The EQF allows learners, education providers and employers a mechanism to compare qualifications between different countries' national qualifications systems. The NFQ Level 6 qualification is aligned to a Level 5 Foundation Degree under the Framework for Higher Education Qualifications (FHEQ) of Degree Awarding Bodies in England, Wales, and Northern Ireland. Foundation Degree programmes which integrate WBL and focus on the part-time learner are found in several domains including the Allied Health Sciences. The authors have previously shown, [2], how the integration of a model of blended learning can often prove to be the optimal mode of delivery for this cohort of learners.

The programme discussed in this case-study required learners to attend the HEI one day per week for four semesters with learners completing an applied practice module in their workplace. Feedback from academic staff and learners indicated that the design of the programme was challenging and found to be operating ineffectively for both the learner and employer as stakeholders. Consequently, a review of the curriculum design was initiated. The multifaceted review included four tiers to be considered:

- stakeholder feedback provided via structured focus groups;
- structural review of similar Foundation Degree programmes internationally;
- establishment of training requirements of hearing aid companies in the ROI to identify a preferred WBL model;
- engagement with representatives of the national professional body for Hearing Aid Audiologists - the Irish Society of Hearing Aid Audiologists (ISHAA).

The outcome of this review culminated in a redesign of the HC programme. This resulted in the introduction of a blended learning mode of delivery which incorporated both online learning and WBL, with face-to-face elements delivered in on-campus, residential block periods of study and training. The adapted programme was

submitted for re-evaluation, through the HEI's standard Quality Assurance processes and procedures. This Quality Assurance process involved both internal review and validation by a panel of external assessors which included an international Professor of Audiology, a senior representative of the professional body, and an online learning specialist from an external university.

The Programme Design Team introduced week-long residential blocks into the modified programme, with the aim of addressing the significant disruption caused to students having to return to the HEI once per week to engage with face-to-face sessions in the original programme delivery. The week-long residential block system also was expected to alleviate concerns raised by the students enrolled on the original programme with respect to the substantial weekly travel costs incurred going to and from campus for just one day on a weekly basis. As is the norm on many of these programmes which serve a national cohort, students often reside at considerable distances from the HEI.

Academic staff expressed the view that consecutive days on campus would enable a better educational experience for the learner. This would allow the students to have more time to engage with the lecture content in a supportive educational environment, and facilitate greater interaction with their peers and the academic staff. The residential block model was deemed to benefit not only the teaching of theoretical concepts but also professional practice in Audiology. Additional time allowed for a more in-depth exploration of topics and the application of theoretical principles to practice. The remodelled programme included supportive online learning between the residential blocks. This complemented the face-to-face sessions and kept learners engaged with the core theoretical concepts. WBL was integrated continuously throughout the two years of the programme. The integration of this learning model provided most of the required practical skills, professional competencies, and training opportunities. Additional training and practical assessment took place when students were on campus for the residential blocks. In total, there was a total of six residential blocks over the two years of the programme.

2.1 Pedagogical considerations in curriculum design

Where possible, programme design should include a variety of pedagogical approaches at both the programme and modular levels. This helps to accommodate different learning styles, provide a conducive learning environment and a supportive platform to allow each learner to succeed. This approach is the essence of Universal Design for Learning (UDL), encapsulating choice in all areas of pedagogical delivery. The UDL framework helps to promote an inclusive education in a diverse classroom setting [3]. It encompasses how learners engage with their programme of study, how they engage with the assessment model and how they learn. UDL also places a high degree of responsibility on the academic staff delivering a programme, as they are tasked with finding novel ways to address the challenges of a diverse student cohort [3] whilst ensuring an inclusive learning environment.

A behaviourist approach to teaching and learning has an emphasis on learned behaviours. Cognitivism is considered an active process and constructivism uses novel understandings by working through problems, by combining knowledge from different sources [4]. Various pedagogical methodologies include but are not limited to traditional, university-style lectures, problem-based learning (PBL), active learning activities (such as case studies, critical reviews of procedures, flipped classroom activities etc.) and practical tasks associated with clinical competency procedures.

In the flipped classroom approach, traditionally what would be completed in a classroom setting will be carried out by the student in their own time or vice-versa [5]. Adopting the mixed methods approach [4], helps to ensure that all modes of learning are supported. Regardless of students' perception of their learning style preference, adequate support should be provided in the educational environment to allow them to achieve their individual best.

Additionally, it is important for graduates to develop capacity for independent learning, reflective and evidence-based best practice, and the ability to enhance their problem solving and team-working aptitudes. As advocated in Ref. [4], using a combination of pedagogical approaches assists the learner in nurturing such skills and competencies. Several studies across multiple disciplines outline various modules and programmes which highlight the importance of the development of transversal skills within a curriculum [6, 7]. The incorporation of generic, transversal skills within a curriculum is important in healthcare, as such skills are essential to the Allied Healthcare practitioner working daily in a modern, multi-disciplinary professional environment.

2.2 Reflection on implementation of a part-time programme incorporating WBL, delivered through blended learning

2.2.1 Reflection on the residential block model

Residential study programmes are often an integral component of blended learning programmes. The Open University in the UK has used a model of Residential Summer Schools to great effect as part of its blended learning approach to programme delivery. One of the authors of this current Book Chapter served as a Residential Tutor at one of the week-long Open University Summer Schools in Chemistry at the Department of Chemistry at the University of Nottingham over several years. Reflecting on the pedagogical benefit of such a model the authors see the advantage of the Residential School model to the part-time learner, as part of the blended learning mode of delivery. The key to the success of such a model is the integration of several key strands within the residential programme. These include having a dedicated team of enthusiastic and supportive academic and technical staff, a suitably tailored induction session, an intensive programme of practical work, tutorial sessions and a strong programme of social activities. This interaction creates an environment where students experience community life in a university setting. Any residential programme should also ensure that students have access to the various support networks that universities provide to full-time students, including access to Student Resource Centre personnel, healthcare and other pastoral supports, access to library, IT, and sports facilities. Of course, the challenge for the university in supporting a residential programme almost always centres on the deliberation between the economic cost of running such a programme (often outside of formal teaching time during a semester) and the educational benefit gained by the part-time learner, while being on campus.

With respect to the HC programme, the establishment of the "university community" ecosystem developed from the outset of the programme. As part of the first residential block, an induction programme designed by the Programme Team was delivered to include scheduled sessions from student support services including the Student Resource Centre, the Students' Union, and library support staff. The induction programme ensured that all students were aware of and had access to all academic and pastoral support services. The induction also included a comprehensive

IT session. For students on blended programmes, the virtual learning environment (VLE) plays a particularly important role as it is their primary point of contact with peers and lecturers. The VLE provides access to the online classroom and acts as a repository for programme information and activities. Interestingly, students who use VLEs regularly have been shown to perform better at examinations than those who only use it as a resource just before an examination [8]. Therefore, within the IT session, the session leader typically demonstrated how to engage with the Moodle VLE, source information, upload assignments, use forums and discussion boards, communicate with peers and lecturers and so forth. Whilst a small number of the students on the HC programme had prior experience of VLEs, many had no previous experience. The Programme Team found that it was important to schedule this hands-on session at the beginning of the programme. The IT session also showed students how to log onto and get familiar with Adobe Connect which was the platform used for both synchronous and asynchronous online lectures at the time of the initial programme delivery. Providing these sessions during the induction ensured all students attained the basic skills to use the platforms required for the online elements. This helped reduce the possibility of potential problems arising later during programme delivery.

Residential block activities in the programme included traditional, face-to-face lectures, workshops, group work, smaller group tutorials, practical training, and assessment. In the context of WBL, the Programme Design Team was conscious that many of the learners on this programme were returning to education after many years and had limited experience of university life. As most of these students were on campus during the residential blocks, the Programme Design Team concluded on reflection that this type of learner can feel extremely isolated and may not consider themselves part of the "university community". During the recent COVID-19 global pandemic, this degree of social isolation of the online learner was found to have grown exponentially. This was the personal experience of the authors in their own universities when supporting their student cohorts in their learning pathways throughout the pandemic. As academic staff, the authors found that not only were they serving their central academic function, but in addition the pastoral role of the academic staff member increased, which invited considerable self-reflection on the optimal mode of learning style that should be fostered. In many cases the authors found that the creation of an active learning ecosystem in their programme delivery, maximising student peer-to-peer interactivity, had to be elevated. The challenge for the university academic is often to create the educational and social environment of the university community in a uniquely online world. Of course, the experiences gained by this academic form of self-reflection creating a university community for the online learner provides a perspective that the academic often may not fully appreciate. This is of particular consideration especially when working with learner cohorts in fully online or blended learning programmes, incorporating a WBL element.

The authors found that one main advantage of the weekly residential block model was that students experienced a structured induction during the initial stages. Induction sessions were conducted by the Academic Team and representatives from the wider HEI support services. Due to time constraints with respect to effectively delivering the programme, the restricted model of students being present on campus for only one day per week, resulted in students having a relatively shorter induction programme than would normally be the case. This caused problems later in the original programme, as students were often unaware of HEI policies particularly around assessment processes, and support networks. Academic staff who had taught on both iterations of the programme felt that the benefits of the multiple induction sessions in the week-long

residential block model contributed to the delivery of a considerably more efficient and streamlined programme. Students were aware from the start of the programme of the available support services such as academic writing and mathematics tutorials. Several students availed of these services, in contrast to the cohort who were enrolled initially on the programme, and who were present on campus for only one day weekly. Additionally, learners taking the revised programme were aware of the importance of deadlines and assignments, mitigation, and penalties for late submission as they were provided with this information verbally during their induction (in addition to the relevant handbooks and regulations). Both students and staff felt that the week-long residential blocks allowed students to be part of the HEI community. Students also informally relayed back to academic staff that as they were on campus in block periods, they got to network with their peers in the evenings which made their studies more enjoyable. Informal study groups were established by the students themselves during the residential programme, which proved advantageous during the programme roll-out.

From the collective academic and management experience of the authors across a broad spectrum of programmes, frequently it was found that the students considered the first residential induction week as involving a degree of "information overload". Learners may not recall everything that they were told during this session. The Programme Design Team found it was important that key documentation was also provided in hard-copy format following the induction session, such as the Programme Handbook and other relevant information. One of the recommendations from the focus groups with stakeholders indicated that it was "… important that the HEI provides the same pastoral care to online learners". Therefore, in addition to the strategies discussed, a Personal Tutor system was implemented for the programme. Learners had a dedicated member of the academic staff who served as a personal contact for advice or support throughout the entire programme. As the authors reflect on the world of online learning in the post-COVID-19 world, the importance of the establishment of the Personal Tutor system for universities engaging in any form of programme delivery with an online model is essential. For universities of the future to be fully designated as student-centred educational communities, the centrality of each learner must be at the core of programme delivery.

The authors reflected upon feedback gathered from the stakeholders. They concluded that the residential block approach for delivery was successful and had several beneficial outcomes. For the student cohort, it provided a significant reduction in travel time to and from campus. Their residential block was found to be intensive but focussed. Students were not distracted by work commitments and responsibilities or other external factors but could fully engage with the learning. Additionally, students also reported that importantly it provided them with an opportunity to get to know their peers and build informal support networks. Academic staff who taught both on the original one day per week on-campus programme and the remodelled blended programme felt that the week-long residential blocks worked much better for students for a number of reasons:

- students were able to engage more consistently with academic staff;
- there was better continuity so students had time to digest information and if they had questions they could discuss them in person during the residential programme with academic staff and learner peers;
- the blocks provided suitable contact time for both scaffolding and core modules, thereby enabling the development of essential transversal skills in addition to

the delivery of theory and practical training. Whereas in the previous model, the scaffolding modules were afforded little face-to-face time as the focus was on core material.

The first iteration of the blended programme included six residential blocks. Based on feedback from the first student cohort and as discussed in [2] the learners felt that more residential blocks were needed. Therefore, the number of blocks was increased to seven for the subsequent cohort.

Taking a wider prism view beyond COVID-19, some of the authors also engaged recently in the introduction of Team-Based Learning (TBL) in programme delivery in programmes in the STEM area. TBL is an established model of group work [9–11] and has been found to be an excellent way to develop key skills such as critical thinking, communication and teamwork. Using this approach students are motivated to learn and engage in the learning process. TBL empowers students to become effective problem solvers and gain the requisite skills to become lifelong learners. The main methodology applied in TBL is that learners study core content outside of formal class time employing a flipped classroom approach through guided reading. Learners then engage in group activities to consolidate understanding and application of their acquired knowledge. In TBL resources for self-directed pre-class study are provided. The TBL Study Packs include guided reading, internet resources and textbook chapters. This prepares learners for the Readiness Assurance Process (RAP), Application Exercises, laboratory work, training sessions and workshop sessions. In TBL, learners are assessed via a range of assessments and engage with a Readiness Assurance Test (RAT) at the commencement of each TBL class. This includes both Individual (iRAT) and Team Assessments (tRAT). On completion of each iRAT assessment, learners form their pre-assigned teams (5–7 learners) and retake the assessment collectively as a team (tRAT). Once all the answers have been collated, learners receive real-time, in-class feedback from academic staff. The teams of learners apply their new knowledge and understanding to a range of formative and summative Application Exercises (AE). These may include role plays, problem-solving, experimental work, training exercises and reports, depending on the subject domain.

The authors' recent experience of TBL suggests that this model would be an excellent platform to adopt at a Residential School, where the part-time learner engaged in WBL forms the student cohort. TBL has been applied effectively at a number of universities worldwide including the University of Bradford in the UK in the field of Pharmacy [12]. The Department of Pharmaceutical Sciences and Biotechnology at the Technological University of the Shannon in the ROI has also adopted the model more recently in Pharmacology, Engineering and Business. TBL is now considered as a model of international best practice and can easily be integrated into blended programmes with a WBL remit.

2.2.2 Reflection on the effectiveness of a blended learning approach for the delivery of the WBL programme from the case-study

To evaluate the effectiveness of the blended approach, the authors investigated whether the blended approach is appropriate for programmes where there is a WBL element that involves the development of competencies. Data collection began when the first cohort completed the two-year HC programme and after the second cohort had completed their first year of the programme. Feedback was collected from learners, employer representatives and academic staff regarding the effectiveness and suitability of a blended learning approach. Employer feedback was important to

ensure that as a HEI, the needs of the profession were considered. Research findings are presented in Ref. [2]. Learners confirmed that the blended model enabled them to attain a qualification whilst in employment. A range of positive comments was evident from analysis of the survey of learners. Comments included students stating that the model allowed them to continue in employment and students stating that their financial outlays were significantly reduced with the modification of the programme delivery to the week-long residential blocks, spread over the academic year. The learners also commented favourably on the flexible, accessible nature of the model. 94% of the students surveyed felt that the online sessions supported the face-to-face sessions during the residential blocks [2]. Some limitations reported on the blended approach included: Students felt that more in class face-to face-time was needed; one employer suggested that clearer guidance was needed as to academic staff availability. Some academic staff also raised the same issue that there was a mismatch between students' expectations/the timings of student requests with staff availability [2].

2.2.3 Reflections on the operational challenges of embedding synchronous and asynchronous activities

The online elements of the programme were delivered using both synchronous and asynchronous learning and teaching approaches. Synchronous elements were carried out in real-time at a set time and date similar to a traditional face-to-face lecture, allowing for two-way live interaction. The asynchronous activities provided the learner with flexibility as to when they engaged with programme content material. A transparent feasible timetable, clearly outlining the synchronous and asynchronous activities was critical for the success of the programme. In advance of designing the schedule, Module Leaders worked together to determine the number of sessions required to be delivered synchronously and those that could be completed asynchronously. Synchronous and asynchronous activities were decided in advance of the commencement of each semester as students needed to organise their schedules. During the planning process, this had to be considered at programme level, as the level of synchronous sessions across all modules in any one week had to be feasible and practicable for students. For the first cohort, designing the schedules by the Programme Team proved particularly challenging. The HEI timetabling system was not set up to manage a programme with concurrent synchronous and asynchronous delivery and on-site residential blocks. The Programme Leader liaised with each of the Module Leaders and collated their requirements for delivery for each of their respective modules. A week-by-week schedule for all modules was then constructed. Clear instruction regarding synchronous and asynchronous activities was provided in advance of the commencement of the programme, thereby facilitating both students working fulltime and academic staff who often had additional teaching commitments. Across the modules, the number of live synchronous sessions was limited to one or two maximum per week to make engagement and delivery feasible.

The Academic Team found that there were some technical difficulties in the first week of delivering the live online elements of the programme. Staff reported that it was challenging and difficult to deal with technology issues whilst also delivering a lecture. In most cases, problem solving enabled the live classroom lecture to continue but in some instances the session had to be rescheduled which resulted in considerable inconvenience. As students and academic staff became more familiar with the technology, fewer issues were encountered and in general online lectures ran smoothly. Academic staff progressively became more proficient with the technology, appeared to cope better with IT problems as they arose and were able to deal with issues more promptly.

The live sessions were conducted to be as interactive as possible. Learner engagement was maximised by using different methods such as the chat box function within Adobe Connect, verbal engagement, polls and/or using the interactive whiteboard [2]. The main advantage of the live webinars was that they were conducted in real time and allowed two-way interaction between the learners and lecturers and interaction between peers. It was also particularly important to use live sessions for the more difficult topics as it provided the student with an opportunity to ask questions and get clarification from the lecturer in real time. This meant the lecturer was able to discuss an answer in a more meaningful manner, explain a concept in further detail and engage with the entire class cohort to ascertain if a topic or answer required further explanation. This approach mirrored the normal staff-student type of engagement encountered in the educational setting of a traditional face-to-face lecture. Live webinars also provided students with an interactive learning environment where they could engage with each other outside of the residential blocks and therefore helped create a more collaborative and supportive peer-to-peer network.

Asynchronous sessions allowed the learner to access the material in their own time. This provided learners with a degree of flexibility to engage with material content at a time that best suited the individual. Activities included pre-recorded lectures and other supplementary videos. Academic staff found that substantial time was required for the preparation of pre-recorded lectures. Whilst one may argue that this time implication may balance out over subsequent years of delivery (as pre-recordings may potentially be used again for future cohorts), most lecturers tend to update content annually so recordings would also have to be updated/re-recorded. An advantage of employing pre-recorded lectures, however, is that students can study subject content at a pace and time that suits the individual. In this programme, asynchronous activities were released at a specific day each week and students were requested to engage at some point during the same week. Prompt engagement was important as activities generally built upon prior knowledge.

2.3 Reflection on WBL

2.3.1 Challenges to WBL

The primary challenge when delivering a work-based, competency-focused programme relates to achieving consistency of the application of standards set by the professional body, across all training sites. The professional standards set by the professional bodies are aligned to the quality standards set by the HEI, as determined by the Aim and Objective of the validated programme and its associated Programme Learning Outcomes. It is imperative that all students receive appropriate training that meets the standards of the profession. To achieve consistency, training is best conducted to defined competency standards and universally applied across all sites [2].

To help avoid/address the challenge of ensuring consistency of workplace training, three quality enhancement strategies within the programme were introduced:

- mandatory Practice Educator (PE) training carried out at the HEI;
- a requirement that each student is assigned to a suitably qualified and experienced PE;
- conducting educational audits of the work-based sites.

2.3.2 PE training

A one-day mandatory training course at the HEI was designed for the PEs responsible for the training of students in the workplace. The literature has since recommended that there should be greater focus on the education and training of PEs [13]. It is widely recognised that universities must consider mandatory training for PEs particularly in relation to performance-based assessment [14]. Training for the PEs on the HC programme was particularly critical as they played a pivotal role in assessing a summative practical competency logbook. The PE training day included tailored sessions designed to support the PE in their responsibilities. The programme included the following sessions:

- programme structure and programme content, which provided the PEs with a holistic overview of the programme, including its aim and objectives;
- an explanation of the blended learning approach, so that PEs understood the structure of the face-to-face and online elements and what was required from the student particularly in relation to time commitments;
- a quality standards session (which provided an explanation of the processes involved in quality assurance and which emphasised how the importance of assessing to the required standards of practice can help prepare PEs for their role particularly in relation to summative assessment);
- explanation of the required model of assessment.

The quality standards and assessment sessions are particularly important. As reported in Ref. [15], a large variation was found in the judgement of PEs when assessing nursing students' performance. Therefore, training for PEs was necessary to help ensure consistency in assessment performance and assessment to the correct standards. As found in a corresponding study involving a radiography programme [16], students reported that one of the factors they felt affected their ability to complete their clinical assessments was PEs being unaware of what was needed to complete assessments. Consequently, the Programme Team on the HC worked with PEs to ensure they were fully aware of what was required for practical assessments. A session was delivered for the PEs to guide them in providing meaningful formative feedback to students during their WBL. The literature emphasises the importance of fostering a "feedback culture" and engaging with students to allow them take on board feedback received [17]. Cognisant of the fact that some PEs may not have supervised/taught students previously, the Programme Team also provided a session on student learning styles. During this session, the Programme Team discussed with the PEs how knowledge of students' preference for a particular learning style can help the PE support the student to achieve and succeed [18].

PEs were also provided with hard copy supporting documentation including a dedicated PE manual which provided additional information and links to resources, programme requirements and timelines. Providing PEs with training and associated learning materials serves as a useful resource in the provision of practice-based training [14]. Moreover, regulatory bodies need assurance from universities that PEs are competent in preparing and assessing healthcare students so in turn the students' become competent professionals in the workplace [19].

2.3.3 Educational audits of work-based sites

Each work-based training site was formally audited by two academic staff from the HEI. The academic staff comprised a Lead Auditor who was the Programme Leader and a clinically qualified Audiologist, as well as a second Auditor who was another management/academic staff member involved in the programme. The Lead Auditor attended each site visit, thereby ensuring consistency of the audit process. The quality element of the educational audit of the work-based clinical site was arranged in advance with the work-based PE. During the visit the Auditors completed an extensive 9-page document examining areas such as:

- staff expertise;
- health and safety;
- workplace induction;
- study support;
- clinical procedures carried out in the clinic;
- checklist of all equipment required;
- checklist for smaller consumables.

Four outcomes were possible from the site audit:

1. Suitable: Site deemed suitable for WBL;
2. Partially suitable for WBL: compulsory recommendations to site – with appropriate follow-up by Auditor(s);
3. Suitable for WBL: desirable recommendations to site – with appropriate follow-up by Auditor(s);
4. Site not suitable to be considered for WBL.

The HEI Auditors typically supplied a copy of the report to the PE within one week of the audit. Where an overall classification of 2 or 3 was awarded, the Auditors were required to supply a recommendation to the PEs as to the issues that needed to be addressed to deem the site suitable for training provision. Timelines to address these issues were provided and follow up agreed. The site visit audit also provided a forum (in addition to the PE training) for PEs to ask any additional questions to HEI staff.

HEI staff found the site visits particularly useful as they provided an opportunity to make sure each site had the necessary resources to deliver an effective and consistent educational experience to the students. Most of the site visits achieved a rating of 2 or 3 and therefore had some recommendations to address. All sites audited addressed the recommendations. If it had been the case that any site had not addressed compulsory recommendations or had achieved a rating of 4, these sites would have not been deemed suitable nor used in the workplace training of students.

2.3.4 Reflection on the impact of WBL

WBL can promote the link between practical training conducted in the workplace and HEI discipline-based imparted knowledge [20]. On reflection, the authors feel that the WBL elements of the blended HC in Hearing Aid Audiology programme served their purpose effectively in delivering the overall aim of the programme. The authors believe that the three quality assurance strategies discussed in 2.3.1. helped prevent any significant issues arising in the workplace training and assessment. The strategies helped promote the application of the appropriate quality standards required by the HEI through its quality framework and aligned to the professional standards set by the professional bodies. The strategies also promoted appropriate application of the assessment model within the workplace setting. As discussed in Ref. [2], the authors came to the overall conclusion that in relation to WBL, the HC programme prepared the learner for the workplace and enabled the learner to successfully attain the required competencies.

A systematic review of WBL in nursing found that time constraints and pressures within professional practice can make critical reflection difficult to apply [21]. As part of the audit of the HC sites, PEs were asked how often they would meet with students to encourage them to critically reflect on their professional practice as part of their overall reflection on WBL [22]. The role of the PE in this process is significant. Where time was deemed insufficient by the PE to carry out this function during the normal working week, Auditors made compulsory recommendations as part of the audit follow-up process. Also, by building this practice into the audit process, it meant that during the programme if students felt they were not provided with ample time to discuss their progress with the PE through a self-reflective process, the Programme Leader could act as a liaison between the student and the PE. The PE was reminded in such circumstances of the process expected by the HEI as part of their role and responsibility, having agreed to sign up to the WBL process. In a few instances, a small number of students reported to the HEI Programme Leader that the PE was not allocating sufficient time to the student to meet them and engage in this reflection process. The Programme Leader was able to gently intervene and remind the PEs of their agreement in the audit process, and in most cases, this was addressed immediately. The academic staff understood that PEs' primary obligation is to their clinics, and that PEs often have high workloads, so these issues are typically addressed and solved informally. In one case, this was not addressed immediately, and the PE needed to be reminded several times. Sometimes issues can remain unresolved for an extended period. In this case a meeting was held between the PE and Programme Leader. The PE was reminded of the importance of scheduled, regular reflection with the student and after this meeting, the issue was typically rectified. The author found that by requesting the PE to commit to regular meetings with their student encouraged more regular reflection for the students with the PEs and helped improve the students practice and enhance the WBL.

2.4 Additional strategies

Whilst overall the blended model worked well for this HC WBL programme, the authors consider that several minor changes could be made to enhance this type of programme. Ideally, the involvement of a Learning Technologist or IT Technician acting as a support person in the delivery of all live online lectures would be beneficial to address any technical problems quickly. Whilst cost implications may prevent a

Learning Technologist/IT Technician being a viable option for all webinars across each module, the authors feel that as a minimum some degree of technical support should be available for the first two webinars of any online programme to help students and staff with any technological issues as they arise.

The authors also believe that for a programme where students are required to obtain practical competency in patient-facing programmes, a fully online programme with WBL is not sufficient. Residential blocks provide additional opportunities for learners to enhance their practical training, engage in person with the academic staff and gain greater exposure to theoretical concepts through the associated on-campus supporting lecture and tutorial sessions. Although the authors found that student feedback strongly supports the week-long residential blocks in this HC programme, the authors acknowledge that alternate options for the delivery of face-to-face sessions may work more optimally for other discipline-based programmes.

3. Reflections on a changing educational pedagogical landscape post-pandemic

As the authors of this chapter contemplate the optimal model and mechanism for delivering a blended learning WBL programme to part-time learners their thoughts necessitate greater reflection on delivery across the periods of pre- and post-pandemic COVID-19. Like so many other academic staff around the globe, the authors of this chapter embarked on a further journey of self-discovery, whilst navigating the online world which universities faced overnight in March 2020, resulting from the unprecedented COVID-19 global pandemic.

An example is taken from one of the authors who co-ordinated the rapid move to fully online teaching for a new part-time MSc Hearing, Balance and Communication programme in 2020 at University College Cork in the ROI. The author had 3 years previous experience in coordinating and delivering components online and overall the move to online teaching for the MSc proved to be effective. The MSc programme consisted of both core and elective modules. The majority of the modules were offered via three routes:

1. as part of the main MSc;

2. as standalone credit bearing modules;

3. as non-credit-bearing Continuous Professional Development (CPD) modules.

Whilst the overall transition to this delivery mode worked smoothly, some challenges were encountered. The students enrolled on the programmes were also working professionals and the teaching was scheduled to be delivered over two-day blocks for smaller credit modules and three-day blocks for larger modules. The student cohort comprised of professionals from a range of multidisciplinary medical and healthcare backgrounds who continued to work throughout the pandemic. Although teaching had to be moved online, the university found that it had to maintain the original schedule of the two or three intensive block days to avoid clashes with students' work schedules. To address the problem faced, it was found that the only way to deliver successful, interactive, online sessions condensed into the two or three full days was for synchronous delivery to be employed in a "conference style" approach. Due

to the different entry routes for each module, the author as part of the Programme Team was cognisant that those attending particularly via the CPD route may not have had previous experience of the online delivery in an educational setting. Using past experience of working online with part-time students, the author ensured that step-by-step instructions were provided in advance to help attendees participate online. To help navigate the challenges of intensive full days of live online delivery, the author coordinating this programme ensured that there was always a minimum of two members of staff present (in addition to the speaker/lecturer) throughout each of the intensive two three-day online webinars. A member of the IT Technical staff was also on standby. One member of staff was given the role to introduce the plan for the day, introduce each speaker, ensure smooth transitions between speakers and so forth. The second staff member was available to answer any queries, assist in monitoring the chat box, help guest lecturers with IT issues and where needed contacting the IT Technical support on standby. There were some instances of guest lecturers needing some IT assistance. Having the second member of staff available and IT colleagues on standby was critical. This resulted in an overall successful delivery of several two-to-three-day sessions throughout the pandemic on the MSc.

Due to the rapid, unplanned, upskilling of a high percentage of higher education staff globally to deliver programmes online overnight during the COVID-19 pandemic, many academic staff are now highly experienced in delivering online programmes. This upskilling, in a very positive way, has contributed to more efficient online delivery of current programmes in the post-pandemic era. Throughout the period following Spring 2020, Learning and Teaching Centres at universities worldwide provided an excellent repository of resources and training sessions to facilitate this upskilling of academic staff in the online world. In parallel, relatively new technologies and platforms came to the fore of academic delivery, including Zoom and MS Teams. In a very short period academic staff became proficient in the delivery of programmes online and gained greater competency in the use of emerging technologies. In addition, the pandemic in many ways catalysed many part-time learners who previously struggled with technologies to become adept and skilled rapidly. The impact of this upskilling of both the learner and the academic staff member has created an educational ecosystem which now means that more universities are taking the plunge into the delivery of blended learning programmes or fully online programmes. The world of educational delivery certainly has taken on a new trajectory. This positive outcome in the post-pandemic era may have an impact on the future delivery of programmes in the WBL space, adopting a blended learning approach, incorporating online learning.

Considering the potential that this world of blended learning holds for the university of the future, corresponding alignment with educational policy both at the national (i.e. ROI or UK) and at the European level may be evident in this context. On 16 June 2022, the Council of the European Union (EU) adopted a Recommendation on a European approach to micro-credentials encompassing lifelong learning and employability [23, 24]. The Recommendation aims to support the development, implementation, and recognition of micro-credentials across the university and enterprise sectors and across the EU member states. As articulated by the Council, an effective culture of lifelong learning is essential in ensuring that communities and employees have the requisite knowledge, skills-base and competencies required for continuous professional development and personal growth. Micro-credentials certify the learning outcomes of short-term learning experiences, which may be short programmes of study or defined training periods. The flexible nature of

micro-credentials makes them highly attractive to employers and employees. The short bite-sized nature of micro-credentials also align their application with the ECTS model adopted by European universities across the EU.

There has been exponential growth in the recent development of micro-credentials throughout the EU. This development aligns squarely with the continued growth in programmes delivered via the blended learning mode. The European Council has stated that the opportunities afforded by micro-credentials allow for the provision of more flexible, learner-centred forms of education and training. Another benefit of micro-credentials is that they offer education and training opportunities to a broader spectrum of diverse learners. Micro-credentials can play a very effective role through educational means in assisting some of the socioeconomically disadvantaged groups in society.

The impact of the potential development of micro-credentials can be seen in some of the mission statements of European universities formed through the establishment on a pan-European basis of European University Alliances. European Universities are transnational alliances that have the potential to raise the quality standards and competitiveness of European higher education, [25], paving the way for the university of the future. A key aim of these Alliances is to deliver student-centred curricula, jointly delivered across the various university partnerships. One recently established Alliance has been the creation of the RUN-EU Regional University Network. RUN-EU is now to become an alliance of nine higher education institutions with similar mission statements drawn from across various regions of Europe. The Alliance was established in 2020 under the European Universities Initiative. The Technological University of the Shannon is one member of this European Alliance. As a member of this Initiative, the university is central to the creation of a regional development-oriented European University that embodies the values of sustainability, multiculturalism and inclusiveness, encapsulated in its overall mission [26]. Since 2020, several short-advanced programmes (SAPs) have already been developed across the Network and the university of the future will see further growth in this type of programme. The authors consider this strategic trajectory for many of the European universities to be a platform to allow closer alignment of universities with enterprise and business. Such an alignment can capitalise on WBL opportunities, increased blended learning modes of delivery and greater use of educational technologies to support learning.

One of the authors has recently been involved in designing a Foundation Degree in Hearing Aid Audiology at the University of Central Lancashire in the UK, which is similar in scope and structure to the HC. The authors own previous experience in delivering the HC in the ROI (focus of case-study of this chapter) proved an important experiential step in contributing to the most effective, overall programme design. The author also coordinated and delivered modules on two MSc programmes online during the pandemic at University College Cork in ROI. This collective combination of experiences in online learning helped to inform overall programme design elements for the Foundation Degree at the University of Central Lancashire.

The Foundation Degree programme is designed in a similar fashion to the HC programme combining on-campus residential blocks and integrated face-to-face teaching with WBL and online learning. The programme was accredited by the Health and Care Professions Council (HCPC) in August 2022 and is due to commence in September 2023. Within the same School of Medicine at the University of Central Lancashire there are other allied healthcare programmes with similar structures successfully operating in both Ophthalmic Dispensing and Optometry. On these programmes students acquire practical experience in their work-based practices

and attend the university in residential blocks for face-face instruction with the remainder of the learning conducted online. The Optometry programme was the first Optometry programme in the UK to be delivered in the blended format and graduates have all successfully registered with their registration body.

The authors suggest that this model integrating the residential block model, online learning and WBL will continue to develop and expand in future programme development. The model has the potential to be adopted by other professions both within healthcare and other subject domains, such as in the STEM area.

4. Conclusions

The model used for the HC Sc Hearing Aid Audiology programme can be applied to many other Allied Health professional programmes or programmes in other discipline areas that involve competency-based training. The HC programme was delivered through a blended learning mode of delivery that incorporated a residential block model, online learning (synchronous and asynchronous) and WBL. Introduction of week-long residential blocks, combined with WBL for competency skills and online learning, proved through this case-study to be a very effective and sustainable model. This model has the capacity to be attractive to employees wishing to upskill, whilst remaining in employment. The flexibility of the structure allows the model to be used across a wide range of discipline areas at all academic levels in tertiary education.

As a result of the COVID-19 global pandemic, the advent of both fully online and blended programmes has been significantly accelerated. The world of education has changed irrevocably, as lecturers (and members of the teaching profession) were catapulted into online teaching rapidly, often with no prior formal training in this space. The HC began prior to the pandemic and technology has evolved significantly in recent years since the programme was designed. MS Teams and Zoom technologies are now commonplace additions to online delivery platforms. Whilst many universities have returned to on-campus instruction in the post-pandemic era, many HEIs have retained online elements. A high percentage of universities have now also commenced delivering fully online courses, thereby widening educational provision. Access to higher education has evolved in this period, particularly for specific cohorts who previously may not have been able to enrol on full-time, traditional programmes. The impact of the acceleration of online learning post-pandemic has opened up a world of programmes to multiple cohorts. These include part-time learners wanting to acquire academic qualifications, part-time learners requiring upskilling through the increased volume of micro-credentials available or employees wishing to enrol on CPD courses.

One of the authors delivering Masters level CPD modules during the pandemic, surveyed participants who suggested that flexibility of online delivery of CPD courses allowed them to engage in increased professional development. The European Council has recently consolidated some of these educational opportunities and have stated that the opportunities afforded by micro-credentials allow for the provision of more flexible, learner-centred forms of education and training. One clear benefit of micro-credentials is that they offer education and training pathways to a broader spectrum of diverse learners.

The background of learners is also an important consideration when designing online or blended learning programmes. Whilst many school leavers may have

experience and be particularly proficient with technology, this may not apply to all schools. This holds especially for those schools located in poorer socioeconomic areas within a region that may not have access to the necessary technological infrastructure. The HC programme discussed in this chapter involved a foundation level HC for mature students. The educational background of these students was diverse. To ensure that all registered students embarking on the programme had a sufficient standard of digital literacy, the Programme Team included a significant digital skills element as part of the induction. The authors found through their experience that it is important when designing blended or fully online programmes to be cognisant of the fact that even in the post-pandemic age of vast technology, it should not be taken for granted that all learners will be proficient with all IT platforms. For some programmes inclusion of this digital skills session may not be necessary. Hence, by scheduling this as an optional session puts the onus on the student to decide whether they need this training or not.

One of the challenges facing Programme Design Teams when converting/designing blended/online programmes with a work-based or placement element in the field of healthcare is to ensure that the programme is fit for purpose and meeting professional body regulations. It is particularly essential that programmes that involve the training of healthcare students who will be working with patients retain their rigour. University policy of having robust Quality Assurance and Quality Enhancement procedures in place that facilitate excellence in the practice of work based/placement elements is essential.

It has also become evident that social isolation can become a concern for both students and staff in a fully online world [27]. It is important that Programme Design Teams consider ways to prevent this from occurring in online/blended programmes. During the pandemic many accounts were reported by the international media of students stating that online lectures were all asynchronous and students had no synchronous interaction with their lecturers. Strategies designed to avoid this were discussed in this chapter. These include building a meaningful, structured induction session into a programme from the outset. This builds the foundation for the establishment of a university community of learners, academic staff and associated university student supports. Additionally, ensuring that online elements comprise of at least some synchronous components is important. Incorporating learning and teaching strategies such as TBL into programmes can also help promote peer-to-peer learning. Two-way interaction between the lecturer and students and peer-to-peer networking further creates the environment of a connected university community, placing the learner at its core.

Author details

Kirpa Chandan[1*], Carmel Kealey[2], Patrick Timpson[2,3] and Brian Murphy[2]

1 University of Central Lancashire, Preston, United Kingdom

2 Technological University of the Shannon: Midlands Midwest, Athlone, Republic of Ireland

3 Atlantic Technological University, Sligo, Republic of Ireland

*Address all correspondence to: kchandan@uclan.ac.uk

IntechOpen

References

[1] Europass, European Union [Internet]. 2022. Available from: https://europa.eu/europass/en/europass-tools/european-qualifications-framework

[2] Chandan K, Kealey C, Timpson P, Murphy B. Blended learning model incorporating online learning for a competency-focused, work-based learning (WBL) programme – Allied healthcare case-study. Higher Education, Skills and Work-Based Learning. 2022;**12**(4):791-806. DOI: 10.1108/HESWBL-03-2021-0058

[3] Capp MJ. The effectiveness of universal design for learning: A meta-analysis of literature between 2013 and 2016. International Journal of Inclusive Education. 2017;**21**(8):791-807. DOI: 10.1080/13603116.2017.1325074

[4] Dabbagh N. Instructional Design Knowledge Base, Models, theories. 2014. Available from: http://cehdclass.gmu.edu/ndabbagh/Resources/IDKB/models_theories.htm

[5] Gilboy MB, Heinerichs S, Pazzaglia G. Enhancing student engagement using the flipped classroom. Journal of Nutrition Education and Behavior. 2015;**47**(1):109-114. DOI: 10.1016/j.jneb.2014.08.008

[6] Ashraf SS, Marzouk SAM, Shehadi IA, Murphy B. An integrated professional and transferable skills course for undergraduate chemistry students. Journal of Chemical Education. 2011;**88**(1):44-48. DOI: 10.1021/ed100275y

[7] Skoyles A, Bullock N, Neville K. Developing employability skills workshops for students' higher education achievement reports. New Review of Academic Librarianship. 2019;**25**:2-4. DOI: 10.1080/13614533.2019.1622139

[8] Horvat A, Dobrota M, Krsmanovic M, Cudanov M. Student perception of Moodle learning management system: A satisfaction and significance analysis. Interactive Learning Environments. 2015;**23**(4):515-527

[9] Carrasco GA, Behling KC, Lopez OJ. First year medical student performance on weekly team-based learning exercises in an infectious diseases course: Insights from top performers and struggling students. BMC Medical Education. 2019;**19**:185. DOI: 10.1186/s12909-019-1608-9

[10] Parappilly M, Woodman RJ, Randhawa S. Feasibility and effectiveness of different models of team-based learning approaches in STEMM-based disciplines. Research in Science Education. 2021;**51**(Supplement 1):391-405. DOI: 10.1007/s11165-019-09888-8

[11] Rotgans JI, Rajalingam P, Ferenczi MA, Low-Beer N. A students' model of team-based learning. Health Professions Education. 2019;**5**(4):294-302. DOI: 10.1016/j.hpe.2018.10.003

[12] Tweddell S. Evaluating the introduction of team-based learning in a pharmacy consultation skills module. Pharmacy Education. 2020;**20**(1):151-157. DOI: 10.46542/pe.2020.201.151157

[13] O'Connor A, Cantillon P, Parker M, McCurtin A. Juggling roles and generating solutions; practice-based educators' perceptions of performance-based assessment of physiotherapy students. Physiotherapy. 2019;**105**:446-452

[14] Alpine LM, O'Connor A, McGuinness M, Barrett EM. Performance-based assessment during

clinical placement: Cross-sectional investigation of a training workshop for practice educators. Nursing and Health Sciences. 2021;**23**:113-122

[15] Wu XV, Enskär K, Pua LH, Heng DGN, Wang W. Clinical nurse leaders' and academics' perspectives in clinical assessment of final-year nursing students: A qualitative study. Nursing & Health Sciences. 2017;**19**:287-293

[16] Hyde E. A critical evaluation of student radiographers' experience of the transition from the classroom to their first clinical placement. Radiography. 2015;**21**(3):242-247. DOI: 10.1016/j.radi.2014.12.005

[17] Carless D, Winstone N. Designing Effective Feedback Processes in Higher Education: A Learning Focused Approach. London: Routledge Publishers; 2019

[18] Dryer R, Henning MA, Tyson GA, Shaw R. Academic achievement performance of university students with disability: Exploring the influence of non-academic factors. International Journal of Disability, Development and Education. 2016;**63**(4):419-430

[19] CORU. Physiotherapists Registration Board Criteria for Education and Training Programmes. Dublin: CORU; 2018

[20] Major D. Models of work-based learning, examples and reflections. Journal of Work-Applied Management. 2016;**8**(1):17-28. DOI: 10.1108/JWAM-03-2016-0003

[21] Nevalainen M, Lunkka N, Suhonen M. Work-based learning in health care organisations experienced by nursing staff: A systematic review of qualitative studies. In Nurse Education in Practice. 2018;**29**:21-29. DOI: 10.1016/j.nepr.2017.11.004

[22] Helyler R. Learning through reflection: The critical role of reflection in work-based learning (WBL). Journal of Work-Applied Management. 2015;7(1):15-27. DOI: 10.1108/JWAM-10-2015-003

[23] European Commission [Internet]. 2022. Available from: https://education.ec.europa.eu/education-levels/higher-education/micro-credentials

[24] Council of the European Union. 2022. Available from: https://data.consilium.europa.eu/doc/document/ST-9237-2022-INIT/en/pdf

[25] European Commission [Internet]. 2022. Available from: https://education.ec.europa.eu/education-levels/higher-education/european-universities-initiative

[26] Regional University Network [Internet]. 2022. Available from: https://run-eu.eu/about-us/

[27] Filho W, Wall T, Rayman-Bacchus L, et al. Impacts of COVID-19 and social isolation on academic staff and students at universities: A cross-sectional study. BMC Public Health. 2021;**21**:1213. DOI: 10.1186/s12889-021-11040-z

Chapter 11

Flipped Classroom Approach of Teaching Chemistry in Higher Education

Kaouther Ardhaoui

Abstract

The flipping classroom method has been increasing steadily in acceptance and approval worldwide. In fact, there is a global agreement on the benefits of flipping courses at all levels and different majors. This approach has been largely adopted, specifically at the level of higher education. Our findings revealed an amelioration of the mean student's success percentage with the use of Edmodo and Moodle during the environmental chemistry course taught with the flipped approach. This paper reviews the flipped classroom method as an advantageous active learning method and counsels its combination with modern information and communication technology (ICT) for better profit as well.

Keywords: chemistry courses, higher education, flipped teaching, ICT, classroom approach

1. Introduction

According to Bonwell and Eison [1], the term "active learning" has never been specifically defined in educational researches and books. Some general features are usually related to the usage of policies that promote active learning in the class: Students' duty is not limited to listening. Low importance is given for transmitting information and much more on rising students' skills. Students are implicated in higher-order reflection (analysis, synthesis, and evaluation), and they are involved in activities (e.g., reading, discussing, and writing). A particular importance and consideration are bestowed on students' investigation of their own attitudes and standards.

Moreover, active learning is defined as any instructional method that engages students in the learning process [2]. The core elements of active learning are student activity and engagement in this learning process. Active learning is often contrasted to the traditional lecture, where students passively receive information from the instructor [2]. This strategy of active learning is generally adopted to improve Students' Critical Thinking, Performance, Creativity, Motivation, and Communication Skills [3–6]. Furthermore, Bonwell and Eison [1] stated that there is a Serious Problem in Higher Education which is described in eight perceptible discrepancies in the practice of higher education, counting the gap between teaching and learning, the gap between teaching and testing, and the gap between educational research and practice which were also acutely studied by Weinert et al. [7]. A thoughtful discrepancy also

occurs between how university educators typically teach (i.e., counting mainly on the lecture method) and how they intend and are supposed to teach (i.e., employing active learning to enable students' control of subject matter, improve academic capacities, and build personal perceptions and principles). Then there are solutions to abolish this discrepancy by adapting the lecture, performing more inspiring class discussions, and using other tactics related to active learning, such as blended teaching.

Essentially, this paper reports the important features of some reviews about flipped courses, especially chemistry courses at the level of higher education, in addition to modern techniques potentially useful to increase the benefits of flipping courses.

2. Presentation of the flipped course method

McNally et al. [8] identify a flipped classroom broadly, if events that have typically and traditionally happened inside the "classroom" (e.g., lectures) occurred outside the session. Crucial essentials of what founds a flipped classroom consist of (a) an opportunity for students to acquire introduction to study content before the class (e.g., recorded lectures), (b) an encouragement for students to prepare for class (e.g., pre-class quizzes), (c) a process to evaluate student understanding (e.g., graded pre-class quizzes), and (d) in-class activities that emphasize on higher-level cognitive activities including active learning, peer learning, and/or problem solving.

Additionally, the basic purpose of flipping the classroom is to relocate activities traditionally conducted within the classroom, like lectures, to educational resources that students engage with before attending class. This reallocation is intended to free classroom time to create meaningful learning situations for in-class interaction between students and teachers [9]. Also, Cheng et al. [10] define the flipped classroom instructional strategy as students learning with instructional supporting materials like documents or videos before class and then engaging in interactive and collaborative learning activities that facilitate their understanding, application, analysis, evaluation, and creation during class. Besides, O'Flaherty & Phillips confirm that students who are most profoundly involved will reflect, inquiry, speculate, estimate, and make links between ideas [11]. Otherwise, students who are disconnected seem to take a superficial method to learning by replicating transcripts, converging on disjointed evidences and hopping to deductions. During the flipped course, teachers and students have particular duties. In fact, Ozdamli & Asiksoy resumed and listed these roles as follows [12]:

3. Teacher's role

Create learning conditions based on direct questioning of knowledge, become a facilitator to promote learning, engage in one-on-one interactions with students, correct misunderstandings, personalize learning for each student, use technical equipment suitable for learning conditions, and create interactive discussions and conditions, increase student engagement, share lecture videos as extracurricular activities, provide feedback by applying teaching strategies.

4. Student's role

Take responsibility for their own learning, watch pre-class lecture videos and use learning materials to prepare for lessons, study at their own pace, interact with

teachers and friends as necessary, receive and give feedback, participate in class discussions, and participate in teamwork.

As regard to some confusions and misunderstandings of what flipped learning is, the Flipped Learning Network delivered the subsequent definition (Flipped Learning Network, 2014):

> *"Flipped Learning is a pedagogical approach in which direct instruction moves from the group learning space to the individual learning space, and the resulting group space is transformed into a dynamic, interactive learning environment where the educator guides students as they apply concepts and engage creatively in the subject matter" [13].*

5. Flipping courses in chemistry

Bodner stated that the principal learning theory in chemistry education is constructivism, which aims to base students' approach to learning, by absorbing new ideas and information so that it makes sense with what they already know [14]. Teaching underneath the sphere of constructivism would consequently mean that teachers do not just inform students what they are in need to acquire, but deliver structured activities so that they become able to build their knowledge within the strictures of their own prior knowledge [13]. Besides, Bergmann & Sams affirmed that flipping the classroom establishes a framework that ensures students receive a personalized education tailored to their individual needs [15]. Likewise, Bancroft et al. stated that numerous studies represent increasing evidence that flipping chemistry lecture courses have the potential to yield small to moderately significant gains in student academic performance compared to traditional lecture-based courses [16]. While studying the flipped classroom model in higher education, Al-Samarraie et al. revealed that chemistry was the foremost subject that profited from applying such approach. The flipped course was found to enable students' engagement and self-efficacy in studying by inspiring them to reflect on the topic and work with peers to answer questions and crack issues [17].

For example, in their evaluation of a flipped-format general chemistry course, Weaver and Sturtevant found that this teaching procedure increased student exam scores and passing rates [18]. In another study on organic chemistry, Fautch showed an improvement in the summative assessment of the students attending the flipped course with a noticeable gain in confidence and passion for the subject [19].

In our previous research [6], we found that flipped courses did not only improve achievement in a notable way, but they also boosted motivation levels. The likeliest explanation for this association between motivation and achievement is that increased motivation, the immediate reaction to a new learning task, is an affective state that involves feelings of arousal, alertness, attention, and concentration and is, therefore, a key initiator of productivity and achievement [20]. Our results were in line with subjective impressions: considering novel learning methods like flipped courses, revealed that these might be not only more motivating in comparison to classic courses, but also added that they might trigger knowledge acquisition. These outcomes are in agreement with those of Weaver and Sturtevant, who, after three years handling ACS (American Chemical Society) standardized exams, executed flipped courses and found that scores in the latter were significantly higher by almost one standard deviation when equated with students' preceding scores in conventional courses [18].

Our results agree, in an additional context, with a similar meta-analysis on the effects of flipped courses on learning results [21]. During this meta-analysis, the author established a strong positive impact of flipped courses and showed the definite potential of face-to-face time and quiz activities, which seem to configure the largest effect size.

6. Combining flipped courses with other technics

Observing the results' evolution of the achievement tests is related to the environment chemistry course that we have been teaching since 2018. We noticed a continuous improvement in the results of the students attending this course, where the flipped teaching techniques were considered, with the use of applications. In fact, during the university year 2018–2019, a flipped course with paper documents was taught, during the university year 2019–2020, a flipped course with numeric documents displayed on Edmodo was proposed, and during the university year 2019–2020, the same course was taught with Moodle where documents were displayed in addition to interactive activities. The mean student's success percentage was 74.2% in 2018; 77.3% in 2019; and 81.8% in 2020; such a result is likely to be due to the handling of ICT. This is in accordance with similar studies on the effect of modern technologies of communication on student grades. Actually, chemistry students' own smartphones, laptops, and tablets and could use appropriate apps to complement traditional forms of learning. There is a positive correlation between the relative grades obtained using mobile applications and the final exam grades [22]. Moreover, according to Guerrero et al., handling mobile applications in the lectures enthused not only collective work but also the use of mobile technologies for studying basic sciences [23]. In the laboratory, this technological skill abridged the average time of practices and led to an important reduction in reagent waste in the experiences as well as improved the number of successes regarding problem samples. In fact, interactive learning is one of the approaches, which is very important to explore in higher education. In addition, the use of modern computer software in educating chemistry makes the basis for rising students' curiosity in chemistry, delivering knowledge, and combining knowledge. Chemical computer software is a program intended to accomplish calculations of complex chemical equations and procedures, the structure of chemicals, their identification, and the presentation of the characteristics of various substances [24].

7. Discussion

Numerous studies have shown the advantages of using the flipped course approach in several disciplines, such as Hew et al.'s second-order meta-analysis of flipped classroom usage across subjects found that the flipped classroom approach improved overall academic performance compared to traditional non-flipped classrooms [25]. In a similar context, according to a systematic review performed by Akçayır and Akçayır, a reverse course leads to positive academic outcomes because it encourages improvement in student learning (e.g., enhanced motivation to learn, positive student attitudes) [26]. Recently, Jong reported that students from teaching subjects of language education, social and humanities education, and mathematics and science education, appreciated flipped courses as having desirable benefits for attention, relevance, and satisfaction, especially in chemistry teaching at the higher education level [27].

Meanwhile, some challenges and limitations were reported, related essentially to the lack of students' engagement in the extra class activities [11], the risk of being stubborn at the beginning and may come to class without preparation, and this approach is also seen as increasing rather than relieving teachers' responsibilities [12]. Consequently, some solutions are proposed in order to counter these issues, such as open teacher–student communication before flipping, showing students how to learn through flipped classrooms, and using gamified learning materials to monitor and motivate students' studying [28].

Additionally, using modern technologies like computers and applications raises the efficiency of teaching and the interest of students in learning. In fact, Ottenbreit-Leftwic et al. enlightened the results of surveys indicating that teachers use technology to address both majors (e.g., creating customized instructional materials, improving classroom management through student engagement) and student needs (e.g., improving student comprehension and equipping students with technology skills) [29]. Similarly, Ertmer & Ottenbreit-Leftwich proposed that teachers' mindsets must change to embrace the idea that teaching will not be effective without the appropriate use of information and communication technology (ICT) resources to facilitate student learning [30].

It is then advisable to combine the flipped course approach with modern technologies. In fact, the unified flipped learning model is wished for including the features of mobile and wireless communication technologies into the flipped classroom model to afford a director for researchers and educators to create operative flipped learning activities and plans for activating students' learning effortlessly across frameworks [31]. Furthermore, incorporating game elements into a flipped classroom increases motivation, participation, and learning performance. It is also found that the platforms, Moodle and Kahoot, are the most preferred platforms and points, badges, and leaderboards are the most used game elements for gamification [32]. Hence, the flipped course method is recommended in teaching chemistry courses in higher education, especially while combining this method with modern information communication technology.

8. Conclusion

This paper presents some eminent features of the advantages of adopting a flipped classroom approach, particularly during chemistry courses at the university, with a preference for joining this approach with modern technologies like computer and mobile applications. We found that combining applications like Edmodo and Moodle with the flipped course triggered better success percentages for students than paper-based flipped courses. Such a combination is now considered and generalized to all our courses where Moodle is used to teach chemistry flipped courses related to green chemistry, water treatment, and cosmetic formulation.

Author details

Kaouther Ardhaoui
Higher Institute of Applied Biology of Medenine, Arid Region Institute of Medenine, Research Laboratory of Eremology and Combating Desertification, University of Gabes, Gabes, Medenine, Tunisia

*Address all correspondence to: ardhaouikaouther@gmail.com

IntechOpen

References

[1] Bonwell CC, Eison JA. Active Learning: Creating Excitement in the Classroom. Washington, DC: George Washington Press; 1991

[2] Prince M. Does active learning work? A review of the research. Journal of Engineering Education. 2004;**93**(3): 223-231. DOI: 10.1002/j.2168-9830.2004.tb00809.x

[3] Kusumoto Y. Enhancing critical thinking through active learning. Language Learning in Higher Education. 2018;**8**(1):45-63. DOI: 10.1515/cercles-2018-0003

[4] Mora H, Signes-Pont MT, Fuster-Guilló A, Pertegal-Felices ML. A collaborative working model for enhancing the learning process of science & engineering students. Computers in Human Behavior. 2020;**103**:140-150. DOI: 10.1016/j.chb.2019.09.008

[5] Partanen L. How student-centred teaching in quantum chemistry affects students' experiences of learning and motivation—A self-determination theory perspective. Chemistry Education Research and Practice. 2020;**21**(1):79-94. DOI: 10.1039/C9RP00036D

[6] Ardhaoui K, Lemos MS, Silva S. Effects of new teaching approaches on motivation and achievement in higher education applied chemistry courses: A case study in Tunisia. Education for Chemical Engineers. 2021;**36**:160-170

[7] Weinert FE, Schrader F-W, Helmke A. Educational expertise. School Psychology International. 1990;**11**(3):163-180

[8] McNally B et al. Flipped classroom experiences: Student preferences and flip strategy in a higher education context. Higher Education (Dordr). 2017;**73**(2):281-298

[9] Lundin M, Bergviken Rensfeldt A, Hillman T, Lantz-Andersson A, Peterson L. Higher education dominance and siloed knowledge: A systematic review of flipped classroom research. International Journal of Educational Technology in Higher Education. 2018;**15**(1):20

[10] Cheng L, Ritzhaupt AD, Antonenko P. Effects of the flipped classroom instructional strategy on students' learning outcomes: A meta-analysis. Educational Technology Research and Development. 2019;**67**(4):793-824

[11] O'Flaherty J, Phillips C. The use of flipped classrooms in higher education: A scoping review. The Internet and Higher Education. 2015;**25**:85-95

[12] Ozdamli F, Asiksoy G. Flipped classroom approach. World Journal on Educational Technology: Current Issues. 2016;**8**(2):98-105

[13] Seery MK. Flipped learning in higher education chemistry: Emerging trends and potential directions. Chemistry Education Research and Practice. 2015;**16**(4):758-768. DOI: 10.1039/C5RP00136F

[14] Bodner GM. Constructivism: A theory of knowledge. Journal of Chemical Education. 1986;**63**(10):873

[15] Bergmann J, Sams A. Flip Your Classroom: How to Reach Every Student in Every Class Every Day. Washington, DC: International Society for Technology. in Education; 2012

[16] Bancroft SF, Jalaeian M, John SR. Systematic review of flipped instruction

in undergraduate chemistry lectures (2007-2019): Facilitation, independent practice, accountability, and measure type matter. Journal of Chemical Education. 2021;**98**(7):2143-2155

[17] Al-Samarraie H, Shamsuddin A, Alzahrani AI. A flipped classroom model in higher education: A review of the evidence across disciplines. Educational Technology Research and Development. 2020;**68**(3):1017-1051

[18] Weaver GC, Sturtevant HG. Design, implementation, and evaluation of a flipped format general chemistry course. Journal of Chemical Education. 2015;**92**(9):1437-1448. DOI: 10.1021/acs.jchemed.5b00316

[19] Fautch JM. The flipped classroom for teaching organic chemistry in small classes: Is it effective? Chemistry Education Research and Practice. 2015;**16**(1). DOI: 10.1039/C4RP00230J

[20] Ainley M. Connecting with learning: Motivation, affect and cognition in interest processes. Education in Psychological Review. 2006;**18**(4):391-405. DOI: 10.1007/s10648-006-9033-0

[21] van Alten DCD, Phielix C, Janssen J, Kester L. Effects of flipping the classroom on learning outcomes and satisfaction: A meta-analysis. Educational Research Review. 2019;**28**:100281-100299. DOI: 10.1016/j.edurev.2019.05.003

[22] Fonseca CSC, Zacarias M, Figueiredo M. MILAGE LEARN+: A mobile learning app to aid the students in the study of organic chemistry. Journal of Chemical Education. 2021;**98**(3):1017-1023

[23] Guerrero GE, Jaramillo CA, Meneses CA. Mmacutp: Mobile application for teaching analytical chemistry for students on qualitative analysis. In: 2016 International Conference on Interactive Mobile Communication, Technologies and Learning (IMCL). San Diego, CA, USA; 2016. pp. 50-54. DOI: 10.1109/IMCTL.2016.7753770

[24] Julboev TA, Sultonov MM, Abduvaliyeva K. Teaching Chemistry computer software to students of chemistry in pedagogical higher education institutions. European Journal of Research and Reflection in Educational Sciences. 2021;**9**(2):23-28

[25] Hew KF et al. On the use of flipped classroom across various disciplines: Insights from a second-order meta-analysis. Australasian Journal of Educational Technology. 2021;**37**(2):132-151. DOI: 10.14742/ajet.6475

[26] Akçayır G, Akçayır M. The flipped classroom: A review of its advantages and challenges. Computers in Education. 2018;**126**:334-345. DOI: 10.1016/j.compedu.2018.07.021

[27] Jong MS-Y. Flipped classroom: Motivational affordances of spherical video-based immersive virtual reality in support of pre-lecture individual learning in pre-service teacher education. Journal of Computing in Higher Education. 2022. DOI: 10.1007/s12528-022-09334-1

[28] Lo CK, Hew KF. A critical review of flipped classroom challenges in K-12 education: Possible solutions and recommendations for future research. Research and Practice in Technology Enhanced Learning. 2017;**12**(1):4

[29] Ottenbreit-Leftwich AT, Glazewski KD, Newby TJ, Ertmer PA. Teacher value beliefs associated with using technology: Addressing

professional and student needs. Computers in Education. 2010;**55**(3):1321-1335. DOI: 10.1016/j.compedu.2010.06.002

[30] Ertmer PA, Ottenbreit-Leftwich AT. Teacher TECHNOLOGY CHANGE. Journal of Research on Technology in Education. 2010;**42**(3):255-284

[31] Hwang G-J, Lai C-L, Wang S-Y. Seamless flipped learning: A mobile technology-enhanced flipped classroom with effective learning strategies. Journal of Computers in Education. 2015;**2**(4):449-473

[32] Ekici M. A systematic review of the use of gamification in flipped learning. Education in Information Technology (Dordr). 2021;**26**(3):3327-3346

Chapter 12

The Use of Metacognitive Strategies in EFL Academic Writing

Putri Handayani, Kamaluddin Yusra and Baharuddin

Abstract

Metacognitive is one of the subcategories of learning strategies that consist of planning, monitoring and evaluating. In academic writing, students may have different attitudes towards the use of strategy they might use positive or negative attitudes, namely cognitive, affective and behavioural strategies, depending on personal preferences. This study aims at determining students' attitudes towards metacognitive strategies based on the three dimensions of attitude. The study identifies how students implement metacognitive strategies at the planning, monitoring and evaluating stages of academic writing. The participants of the study were 26 students in IV-B Academic Writing at the English Education Department of the University of Mataram, Indonesia. Questionnaires and interviews were used as data collection instruments, and all students answered the questionnaire. Six students were interviewed as a sample to verify information from the questionnaire. The study shows that the students have a positive attitude in using metacognitive strategies. The study also indicates that the students, at a cognitive level, are aware of the importance of metacognitive strategies in writing the academic papers. The study confirms that students use metacognitive strategies as the background knowledge of ideas before writing down developing the idea, drafting and evaluating the structure and quality of writing.

Keywords: metacognitive strategies, attitudes, learning strategies, academic writing, language learning

1. Introduction

Writing ability is an important skill for students in developing other skills and in completing other tasks in future professional life. In the process of writing, students need knowledge of the correct use of grammar, genres and vocabulary and the ability to self-regulate their own learning [1]. Since writing is a complex process, every student has different strategies to overcome their difficulties in writing, organise and evaluate their writing process in a structured manner [2]. In writing, students use learning strategies by managing and using a set of skills in the academic and non-academic settings, and they have to learn from previous or other sources of learning in order to complete tasks that they are facing more effectively and efficiently [3]. Oxford [4] classifies learning strategy into two categories, that is, direct and indirect strategies. A direct strategy is used within writing processes and student writers can make use of events from memory (i.e., memory strategy), or from previous knowledge (i.e., cognitive strategy), or other alternative ways

where writing ideas cannot be developed from memory or previous knowledge (i.e., compensation strategies). Indirect strategies, on the other hand, are used rather secondarily to writing processes and student writers can support their writing with awareness on personal style of writing (i.e., metacognitive strategies), with personal attitudes towards a particular style of writing (i.e., affective strategies) and with information and assistance from fellow student writes (i.e., social strategies). This study focuses metacognitive strategies and students' attitude towards strategies, and the students' strategies in implementing metacognitive strategies when writing academically.

Metacognitive strategy is an action that gives learners a way to coordinate their learning process because it has gone beyond cognitive devices [4]. It means that the strategy that helps students use cognitive devices and proves to them how to conform to the learning process. Additionally, O'Malley and Chamot [5] classify metacognitive strategies into three subcategories, they are planning, monitoring and evaluation. According to them, with the application of metacognitive strategies, learners can develop their skills in terms of planning, monitoring and evaluating their ideas.

Some researchers have proven the success of the use of metacognitive in the writing process, for example, stated that metacognitive strategy on writing skills expands learners' metacognitive awareness and makes them have a positive attitude towards writing [6, 7]. It also helps the learners to focus on the steps of writing and eliminates shortcomings in writing, the ability to achieve higher thinking capacity and more aptitude to concentrate on writing. But in fact, each student has a different opinion towards the use of strategies in their academic learning. Those opinions are said to be their attitude whether positive or negative. In this study, attitude is the tendency of students to act positively or negatively to the use of metacognitive strategies in academic writing in terms of three components of attitude.

Unlike the previous research, conducting this research is important to further explore and understand students' attitude towards metacognitive strategies in terms of cognitive, affective and behavioural. No one discussed perspectives in the previous studies mentioned above, including the three components. And the second one, it is crucial to know how they use metacognitive strategies in academic writing classes, especially at the English Education Department University of Mataram. Students and lecturers can collaborate to raise awareness and see their response towards metacognitive strategies in the process of learning and what is their attitude towards it. This is in line with the metacognitive sense, which is a person's knowledge of how he or she learns. Therefore, we need to know how they use metacognitive strategies at the stage of planning, monitoring and evaluating so that students and teachers together build students' metacognitive awareness in order to know their attitudes whether positive or negative in terms of those three components. So that they can maintain it or fix it and make their learning practice to be successful in the future.

2. Literature review

As the chapter discusses attitude and metacognitive strategies, this section describes theories related to the research that serves as the foundation for this study.

2.1 Attitude

Attitude plays a crucial role in the learning process because it is an act of one's predisposition that arises towards an object, whether positive or negative. Furthermore,

Mensah et al. [8] defined attitude is a kind of psychological tendency that develops as a result of an experience that affects a person's perception of situations, objects, people and reactions to them either positively or negatively, favourably or unfavourably and neutral or ambivalent. They also stated attitude as a concept of focus on how an individual thinks, acts and behaves. Similarly, Latchana and Dagnew [9] claimed that attitude can be said as a key of concept to understand human behaviour and is defined as a mindset consisting of beliefs and feelings. In summary, attitude is an evaluative process about an object, a person, an event or phenomenon, whether it is positive or negative, reflecting on how we feel about things.

In order to know one's attitude, we cannot only look at the general definition of attitude. For this reason, we need the structure of attitude, because we have to know the components that are in it. Wenden [10] believes that attitude is the learners' tendency to act and consists of three components: cognitive, affective and behavioural. It also tends to encourage learners to adopt certain learning behaviours. So, it is important to know the attitude of students in terms of those three components. The three components are described as follows:

Cognitive component

Cognitive component is an individual's evaluation consisting of beliefs, thoughts or knowledge towards an object, people, idea or event. It seems to affect the learning process because it relates to one's thoughts or perceptions.

Affective component

The second is the affective component, related to an individual's emotions or feelings towards an object, person or issue. An affective component affects one's preferences such as like or dislike or how the object makes you feel.

Behavioural component

The last one is the behavioural component of how one's predisposition in act. How individuals act towards an object depends on their attitude towards the cognitive component and affective component. The answer of this component is not only necessarily in the form of an action that can be evaluated directly, but also can be in the form of statements or sentences.

Learners' attitude in the learning processes plays an important role in influencing learners in setting learning objectives, problem-solving skills, learning beliefs and forming internal or external motivations in all aspects of students' academic performance [11]. Students' learning attitude can be interpreted as a predisposition of students' behaviour when they learn something. Furthermore, in her research, Khikmah stated that learners' attitudes in learning are their own responsibility to the beliefs they have in the learning process and should be evaluated.

A positive attitude in the learning process is very important for students because if they do not have that attitude, they will not be good at carrying out the learning properly. It can be concluded that students' achievement is influenced by their attitude towards the learning process that will drive them to metacognitive awareness because it refers to a person's way of raising awareness about their thought processes in learning. Thus, it will lead us to explore the learners' attitude towards applying metacognitive strategies in the writing process. Additionally, the relationship between students' attitudes on the learning process has a significant impact on the achievement of learners.

2.2 Attitude and language learning strategies

Basically, learning strategy is an action that students use to overcome their problems in the learning process. In considering the importance of language learning

strategies for students, this study will evaluate students' opinions on language learning strategies, namely metacognitive strategies. It is said as the attitude of students towards the strategies they use in the learning process. Oxford [4] claimed that a learning strategy consists of steps that students take to improve the quality of their own learning. In contrast, Richard and Platt [12] stated that learning strategies are thoughts and behaviours that learners use intentionally during the learning process and can assist them in understanding and remembering the new information they receive. In addition, Stern [13] said that learning strategies have different concepts depending on the learners' assumptions. It can be concluded that language learning strategies are actions that students use for understanding new information they receive and use when having problems in doing assignments in language classes, whether consciously or unconsciously to achieve goals in the learning process.

Of the many types of learning strategies, this study focused on metacognitive strategies. The intended meaning of metacognitive itself by Oxford [4] is beyond, beside or with cognitive. Therefore, metacognitive strategies are an action that gives learners a way to coordinate their learning process because it has gone beyond cognitive devices. It is also an action that students take in using cognitive devices and proving to them how to conform to the learning process.

O'Malley and Chamot [5] pointed out that metacognitive strategies are 'higher order executive skills'. Accordingly, metacognitive strategies are the strategies that students usually use when they are doing an independent study. So, metacognitive strategies are also called 'Thinking about thinking'. Some researchers claimed this strategy consists of two elements: knowledge of cognition, also called awareness of how the individual can acquire knowledge, and know about themselves. The second one is regulation of understanding, which contributes to control the process of writing containing aspects such as planning and self-preparation, self-monitoring, self-evaluation and revision [14]. In addition, O'Malley and Chamot [5] stated metacognitive strategies in writing involve thinking about the writing process consisting of planning, monitoring and self-evaluating of what has been written.

In summary, metacognitive is a set process for revealing how a cognition must be controlled and monitored. These strategies play an important role in learning because metacognitive learning strategies are strategies developed and build upon cognitive devices or sets of skills. These skills will then provide awareness or create awareness of the importance of a control in conditions to plan, monitor and evaluate the learning process. The use of metacognitive strategies not only improves the quality and ability of students, but also makes the results of the writing become more structured.

In this research, the researcher uses the metacognitive classification proposed by O'Malley and Chamot [5] to plan, monitor and evaluate. Thus, metacognitive writing strategies are as follows:

Planning

Planning is a good beginning process in conducting the learning process. Before students start to write, it is important for them to plan an outline about what they would be writing. The planning allows students to focus on the goals and ideas they will write about. This process is done when the students have not started writing because they must have some of their writing compositions. However, in some cases, there are also students who are just planning their goals in the middle of their writing. Thus, by making a good plan, it will be easier for the students to determine the direction of their writing and make their writing more structured.

Monitoring

Monitoring could be described as the process of controlling and taking appropriate steps in order to achieve a good piece of writing. It is also a response to the challenges of understanding ambiguity in the new language that serves. Then, another important part of monitoring the writing process is controlling every part we are writing. Students also should check to see if what they write matches the topic being discussed.

Evaluating

Another critical factor to consider in metacognitive strategies is evaluation. This happens when the writing process has been completed. Evaluation will be more successful when it is done in pairs or called peer assessment. Peer assessment conducted by two students exchanges the results of their writing. After looking carefully, they can then discuss the improvements that will be made. The students need to develop the strategy and consider what to check, such as the content of the writing and the structure of the language that is used. Evaluation can allow the learners to realise their strengths and shortcomings in their process of writing. By understanding both, learners can develop their learning strategies to make their writing better in the future.

2.3 Attitude towards metacognitive strategies

After discussing the concepts above, this section will discuss the attitude of students towards metacognitive strategies. Attitude towards metacognitive strategies is how students view the use of such strategy strategies in academic writing. Kulprasit [15] said learning strategies play a crucial role in processing and organising new knowledge related to the knowledge they already have in cognitive devices. Cognitive aspects cannot work alone because they need to be controlled and regulated by metacognitive strategies. Therefore, the learners should be aware of their own thinking abilities and capable of organising them.

Metacognitive strategies related to the knowledge they have are about how they think in the process of learning. It is a sequential process that individuals use to control his/her cognitive activity and ensure that cognitive goals have been achieved. This process helps students in regulating and supervising the learning process. Metacognitive strategies usually follow cognitive activities. They often occur when cognition is experiencing an obstacle in learning. In conclusion, cognitive strategies are the strategies that students used to resolve the shortcomings, while metacognitive are used in order to control the sets of planning, monitoring and evaluating their learning activity.

Moreover, Langan [16] stated that the attitude towards writing is an important factor in writing well. This attitude should be built based on the idea that writing is a skill that can be learned. Every student may have a different opinion towards the strategy they take in the writing process. It means that it is necessary to further see one's response towards the application of metacognitive strategies in academic writing in terms of cognitive, affective and behavioural. It is also important to use metacognitive strategies in the writing process because it is related to what students know about themselves as learners and how they control their behaviour.

In the general concept of attitude mentioned above, three components measure students' attitude towards an object. Then, the student's attitude towards metacognitive is measured from the three components in terms of cognitive, affective and behaviour. Cognitive attitude in metacognitive strategies is students' beliefs, thoughts or knowledge about those strategies in academic writing. For example, I believe that metacognitive strategies make my writing product more structured. While affective attitudes are students' emotions or feeling towards metacognitive strategies. For

example, I feel more confident in using metacognitive strategies. And the last one, behavioural component towards metacognitive strategies is the students' tendency to behave towards the metacognitive itself. For example, metacognitive strategies help me to enhance my learning experience.

3. Methods

This research conducts the descriptive qualitative approach. The qualitative approach focuses on analysis and interpretation. This research aims to explore the students' attitudes towards the use of metacognitive strategies in their academic writing and how students implement the metacognitive strategies. The data were collected by distributing the questionnaire to all students in the IV-B academic writing class consisting of 26 students. There are two kinds of questionnaires in this study. The first questionnaire is about students' attitude towards metacognitive strategies in terms of cognitive, affective and behavioural. The second questionnaire is the Metacognitive Strategies Questionnaire. The researcher also took 6 students to be interviewed to support the questionnaire results. The researcher then analysed the data through the following steps: identification, classification, description and explanation.

4. Findings and discussion

4.1 Students' attitude towards metacognitive strategies

In the first questionnaire, to determine the attitude and answer the first question based on the theory in this research, researchers first counted the mean value of each respondent to find out whether they have a positive attitude, neutral attitude or negative attitude towards the use of metacognitive strategies in academic writing. To find out the mean value of each respondent, researchers use the formula:

$$\mathcal{X} = \frac{\Sigma Xi}{n}$$

where.
X = average (mean)
$\Sigma\chi$i = number of values per item
n = number of items

After each respondent's mean score is obtained, the results of the questionnaire are then interpreted using criteria for interpretation of the rating scale adapted from Kulprasit [15] as in the following **Table 1**.

The results of the Attitude Questionnaire are given in **Figure 1**.

Based on the bar chart in **Figure 1**, most students have a positive attitude towards using metacognitive strategies in academic writing in terms of three components of attitude. Of the three components, one component is most dominant produced by participants, namely cognitive components. Cognitive components of attitude are students' knowledge or belief towards the use of such strategies because they realised the importance of using metacognitive strategies. According to Eagly and Chaiken [17], the cognitive component measures how people think and believe in certain things. Most of the students believe that well-organised writing will produce good writing and improve the quality of writing results.

Range of the mean value	Level of agreement	Attitude interpretation
4.21–5.00	Strongly Agree	Positive attitude
3.41–4.20	Agree	
2.61–3.40	No Idea	Neutral attitude
1.81–2.60	Disagree	Negative attitude
1.00–1.80	Strongly Agree	

Table 1.
Criteria for self-rating scale for attitude.

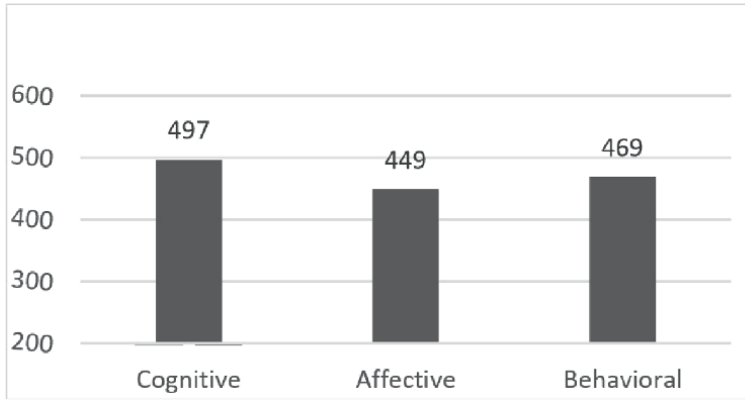

Figure 1.
Attitude questionnaire results.

The findings in this study are similar to the findings made by Al-Jarrah et al. [18] and Talafhah et al. [19] in which they also showed that the majority of students at Ibrid Jordan secondary school recognise the usefulness of metacognitive strategies in improving their writing performance. According to Wenden [10], cognitive component is an individual's evaluation consisting of beliefs, thoughts or knowledge that affect the learning process.

From the results found in this study, it can be concluded that students' attitude towards the use of metacognitive strategies has a strong cognitive attitude but affective and behavioural attitudes are not much different from cognitive results. In conclusion, most students have a positive attitude towards metacognitive strategies in terms of cognitive, affective and behavioural because all of the three components have good scores on the results of students' evaluation towards the strategy used when writing. Although there are seven students who still cannot determine their attitude as they have a neutral result but no one student has negative attitude. Since affective and behavioural components have not been able to balance the results of cognitive component, the collaboration between teachers and students is required to create students' confidence in writing using such strategy equally.

4.2 Metacognitive strategies

Based on **Table 2** below, there are two ways that have the same score that students do in the planning stage. There are 19 students or about 73% of the sample visualising what they are going to write, and when they do not have any idea, they just write

No	Question items	Level of agreement		Total positive high score
Planning		**(4)**	**(5)**	
1	Question 1	12 (46.2%)	6 (23.1%)	18 (69.3%)
2	Question 2	10 (38.5%)	9 (34.6%)	19 (73.1%)
3	Question 3	12 (46.2%)	7 (26.9%)	19 (73.1%)
4	Question 4	12 (46.2%)	6 (23.1%)	18 (69.3%)
5	Question 5	8 (30.8%)	2 (7.7%)	10 (38.4%)

Table 2.
Planning.

whatever they have in their mind. This is a statement contained in the question number 2 that says 'Before I start to write, I find myself visualizing what I am going to write'. It means that most of the students in this research visualise their planning according to the topic to be written before starting to write. They imagine and think about what their writing will look like from the beginning to the end of writing.

In the monitoring stage, the results found that most of the students use their background knowledge to create the content of their writing (**Table 3**). The background knowledge they bring in writing activities comes from the experience and learning they go through during the teaching and learning process or from the previous writing process. The results in this stage are in line with the planning stage where they only utilise their knowledge to produce a writing according to the topic they have created by themselves or determined by their lecturers. In the results of the interview, there are some of the students who say that monitoring is the hardest thing to do because there are some things that really need to be considered. Students also confirmed that when facing problems or having limited knowledge, they looked for more resources to get better understanding about the ideas.

In the final evaluation process, most of the students usually look and think back on how they are writing to see the structure of their writing and what they might need to do more to improve their writing (**Table 4**). After taking a look of their writing

No	Question items	Level of agreement		Total positive high score
Monitoring		**(4)**	**(5)**	
6	Question 6	21 (80.8%)	2 (7.7%)	23 (88.5%)
7	Question 7	15 (57.7%)	2 (7.7%)	17 (65.4%)
8	Question 8	14 (53.8%)	5 (19.2%)	19 (73%)
9	Question 9	7 (26.9%)	1 (3.8%)	8 (30.7%)
10	Question 10	20 (76.9%)	2 (7.7%)	22 (84.6%)
11	Question 11	16 (61.5%)	5 (19.2%)	21 (80.7%)
12	Question 12	10 (38.5%)	3 (11.5%)	13 (50%)
13	Question 13	12 (46.2%)	1 (3.8%)	13 (50%)
14	Question 14	12 (46.2%)	5 (19.2%)	17 (65.4%)
15	Question 15	13 (50%)	3 (11.5%)	26 (61.5%)

Table 3.
Monitoring.

No	Question items	Level of agreement		Total positive high score
Evaluating		**(4)**	**(5)**	
16	Question 16	13 (50%)	4 (15.4%)	17 (65.4%)
17	Question 17	10 (38.5%)	2 (7.7%)	12 (46.2%)
18	Question 18	17 (65.4%)	1 (3.8%)	18 (69.2%)
19	Question 19	12 (46.2%)	6 (23.1%)	18 (69.3%)
20	Question 20	13 (50%)	4 (15.4%)	17 (65.4%)

Table 4.
Evaluating.

results, the students also edit both the content and language of their writing. The students need to develop the strategy and consider what to check, such as the content of the writing and the structure of the language that is used. They usually correct such errors as spelling, keywords, and sentence construction, to make sure that the sentences are connected to each other and use appropriate language to make the readers easily understand. By following these ways, the students think that it helps to improve the quality of their writing. As supported by Cer (2015), the students developed the strategies based on their skills and knew when and why they should use the information they needed to help them in writing.

In conclusion, those are the most common ways that students in the English Education Department at the University of Mataram use metacognitive strategies in academic writing classes. Although they do not know yet about the strategies they use in writing, and almost all students reveal that they have used the strategy and are aware of the stages they do, such as planning, monitoring and evaluating.

Additionally, when using metacognitive strategies, students can make planning first and then decide which approaches can be used in writing and compiling their work, monitoring the writing process in order to make the writing more effective and easy to understand, and evaluating the writing results in order to check some errors and avoid the same errors in the future, Richard and Schmidt (2002). So, the more the students practice writing and evaluate themselves as autonomy learners, the more the students improve their writing skills.

5. Conclusion

This study aimed to identify the most dominant attitude of learners towards the use of metacognitive strategies in academic writing. The most dominant way is that the students use metacognitive strategies in planning, monitoring and evaluating. Based on the findings and discussion related to the first research question, most students have a positive attitude towards the use of metacognitive strategies in academic writing in terms of cognitive because they realised the importance of using metacognitive strategies in their educational academic writing process.

Then, the most dominant metacognitive strategy that students do in the planning stage is to visualise their planning according to the topic to be written. The students also only write whatever they have in their minds. In the monitoring stage, most students preferred to use their background knowledge to create the content of their writing. Meanwhile, in evaluation process, students usually look and think back on

how they are writing to see the structure of their writing and what they might need to do more to improve their writing. The students also edit both the content and language of their writing.

A. Appendices

Appendix 1. Attitude Questionnaire

1. I believe that metacognitive strategies make my writing product more structured.
2. Metacognitive strategies is important because it can increase the quality of my academic writing.
3. Metacognitive strategies make me able to expand my knowledge.
4. Being good in academic writing using metacognitive strategies help me to write well in the other subjects.
5. I believe that the more I practice using metacognitive strategies, the more I improve my writing skill.
6. I feel that metacognitive strategies make me able to create new thoughts.
7. Metacognitive strategies make me feel confident in writing.
8. I feel enthusiast to write when using metacognitive strategies.
9. I feel enjoy to express my ideas when using metacognitive strategies.
10. I do not get anxious when I have to make an academic writing assignments.
11. I like to practice my writing using metacognitive strategies.
12. Metacognitive strategies help me to have good evaluation on my own writing.
13. I always make a good plan, monitor my writing process, and make an evaluation of my writing.
14. Metacognitive strategies help me to improve the quality of my writing.
15. Metacognitive strategies help me to enhance my learning experience.

Adapted from: Attitude/Motivation Test Battery by R. C. Gardner (2004) & Eshghinejad (2016).

Appendix 2. Metacognitive Strategies Questionnaire

1. Before I start to write, I make an outline including a list of the key words of views that I want to include in my writing.

2. Before I start to write, I find myself visualising what I am going to write.

3. When I do not have any idea, I just write whatever I have in my mind.

4. I plan the necessary components in introduction, body, and conclusion of my writing.

5. I thought about how much time I should spend on my writing.

6. I use my background knowledge to create the content of my writing.

7. I automatically concentrate on both the content and the language that I use in my writing.

8. While writing, I identify the mistakes I have made

9. I can effectively manage the time allocated in writing to ensure the completion of the writing task.

10. I pause while writing and ask myself if the information in the content of my writing is clear.

11. I tried to focus my attention on choosing appropriate words and phrases.

12. When I get stuck, I can find ways to solve the problem.

13. I know how to develop an appropriate introduction, body and conclusion of my writing.

14. I stop while writing and ask myself how well I am doing.

15. While writing, I ask myself if the content matches the outline I have already develop.

16. I reread my essay and made sure that I had covered the content fully before I submitted to my teacher.

17. After I finish writing, I know how well I have done

18. After I finish writing, I edit both the content and language of my writing result.

19. I look and think back on how I write and about what I might do differently to improve my writing next time.

20. When I cannot write complicated sentences, I develop other simples one.
Adapted from: Farahian (2015).

Author details

Putri Handayani, Kamaluddin Yusra and Baharuddin*
University of Mataram, Lombok, Indonesia

*Address all correspondence to: bahar@unram.ac.id

IntechOpen

References

[1] Graham S, Harris KR. The role of self-regulation and transcription skills in writing and writing development. Educational Psychologist. 2000;**35**(1):3-12. DOI: 10.1207/s15326985ep3501_2

[2] Karlen Y, Compagnoni M. Implicit theory of writing ability: Relationship to metacognitive strategy knowledge and strategy use in academic writing. Psychology Learning & Teaching. 2016;**16**(1):47-63. DOI: 10.1177/1475725716682887

[3] Schumaker JB, Deshler DD. Validation of learning strategy interventions for students with LD: Results of a programmatic research effort. In: Wong YL, editor. Contemporary Intervention Research in Learning Disabilities: An International Perspective. New York: Springer-Verlag; 1992

[4] Oxford RL. Language Learning Strategies: What every Teacher Should Know. New York: Newbury House Publisher; 1990

[5] O'Malley JM, Chamot AU. Learning Strategies in Second Language Acquisition. Cambridge: Cambridge University Press; 1990

[6] Cer E. The instruction of writing strategies: The effect of the metacognitive strategy on the writing skills of pupils in secondary education. SAGE Open. 2019;**9**(2):1-17. DOI: 10.1177/2158244019842681

[7] Lv F, Chen H. A study of metacognitive-strategies-based writing instruction. English Language Teaching. 2010;**3**(3):136-144

[8] Mensah JK, Okyere M, Kuranchie A. Student attitude towards mathematics and performance: Does the teacher attitude matter? Journal of Education and Practice. 2013;**4**:132-139

[9] Latchana G, Dagnew A. Attitude of teachers towards the use of active learning methods. E-Journal of All India Association for Educational Research. 2009;**21**(1). Retrieved from: https://www.researchgate.net/publication/237759651

[10] Wenden A. Learners Strategies for Learner Autonomy. London: Prentice Hall; 1991

[11] Şen H. The attitudes of university students towards learning. Procedia - Social and Behavioral Sciences. 2013;**83**:947-953

[12] Richard J, Richards J, Platt J. Longman Dictionary of Language Teaching and Applied Linguistics. Essex: Longman; 1992

[13] Stern HH. Issues and Options in Language Teaching. Oxford: Oxford University Press; 1992

[14] Eshghinejad S. EFL students' attitudes toward learning English language: The case study of Kashan university students. Cogent Education. 2016;**3**(1):1-13

[15] Kulprasit W. EFL students' attitudes toward authentic and formative assessment: The role of writing rubric. International Journal of Languages, Literature and Linguistics. 2016;**2**(1):32-37

[16] Langan J. Exploring Writing: Sentences and Paragraphs. 2nd ed. New York: McGraw-Hill; 2010

[17] Eagly AH, Chaiken S. The Psychology of Attitudes. Fort Worth, TX: Harcourt Brace Jovanovich College Publishers; 1993

[18] Al-Jarrah TM, Mansor N, Rashid RA, Bashir I, Al-Jarrah JM. EFL students' attitude toward using metacognitive strategies in. English Language Teaching. 2018;**11**(10):162-171. DOI: 10.5539/elt.v11n10p162

[19] Talafhah RH, Al-Jarrah TM, Mansor N, Al-Jarrah JM. The effect of using metacognitive strategies on writing performance of EFL. Scholars Middle East Publishers. 2018;**1**(2):32-37

Section 3

Sustaining University Education

Chapter 13

Teaching Professional Ethical Knowledge and Teaching Digital Skills in Higher Education

Isabel María Gómez-Trigueros

Abstract

This paper analyzes the professional ethical knowledge of teachers in the use of technologies by teachers in training. It is intended to measure the correct inclusion of technologies in the classroom with the use of the Disciplinary Pedagogical Technological Knowledge model (TPACK). For this, a descriptive exploratory methodological design study was carried out. The instruments used have been the Likert scale questionnaire and the personal interview, organized into four dimensions, which are the self-perception of professional ethical knowledge, ethical knowledge of technology, pedagogical technological ethical knowledge, and disciplinary technological ethical knowledge of the future teachers. The questionnaire has been applied to a sample of 1.051 trainee teachers from a European university in the context of COVID-19 and 822 students participated in the interview. The results show the scarce training in professional ethical knowledge of teachers in training and the importance of addressing this knowledge in the twenty first century, a post-pandemic context. Another of the conclusions is the need to include the ethical component in the TPACK model to achieve correct and ethical use of digital resources in the classroom.

Keywords: professional ethics, teaching digital competence, technology, teachers in training, higher education

1. Introduction

The World Health Organization (WHO) classified the outbreak of the disease caused by the new virus of the Coronaviridae family known internationally as COVID-19 in March 2020 as a global pandemic (National Epidemiological Surveillance Network, RNVE). It was a public emergency, in view of the rapid evolution of infections on a national and international scale. The international health authorities prepared a guide as a strategic plan for preparation and response to the pandemic. This document included the necessary guidelines to act in the generalized state of alarm. These indications were subsequently updated, incorporating others aimed at alleviating humanitarian, social, economic, and educational problems. Schools were forced to move from face-to-face education to distance education based, almost exclusively, on the inclusion of technologies as learning tools. This situation

has given rise to the fact that the two key elements of the teaching and learning process (T-L), students and teachers, have verified the negative consequences of little or no interaction between them, which has endangered the formation of citizenship, as well as the importance of ethical aspects in the educational process.

1.1 The TPACK model and teacher digital skills

The adaptation to virtual teaching has been different in relation to the educational level. Universities are the educational institutions that have suffered the least from face-to-face education to virtual education, but this transformation has not been the same for all of them or for all of their members. Some universities had digital platforms before the pandemic. These universities used these digital resources as a complement to traditional face-to-face teaching [1]. Other universities had to make an effort to be able to adapt to the new 100% virtual situation [2].

There is no doubt that this pandemic has generated an innovative movement in education, helping to find educational solutions in times of confinement. Even so, the new educational situation has put on the table, the importance of training in the proper use of technologies, promoting a correct digital competence of the student. Also, a lack of training in digital skills for active teachers has been detected [2, 3]. This is not something new, many investigations related to the digital training of teachers confirm the need for adequate preparation of teachers for the twentyfirst century. For this training to be correct, it is necessary to have knowledge of the subject to be taught and to have pedagogical knowledge [4], as well as adequate instruction in technological skills [5]. The Disciplinary Pedagogical Technological Knowledge (TPACK) teaching and learning model includes the components and knowledge of teachers for the information technology era. In a virtual world, where technology is of key importance in all aspects of life, this model provides an instructional framework for: students to develop twentyfirst-century skills through the use of technology and for teachers to plan and implement strategies that make the E-A process more successful [5–8].

1.2 The ethics of technologies in the classroom

The concept of ethics is a key factor in higher education, and it is important to study the attitude of teachers toward the ethical use of tools and digital knowledge. Universities have played, throughout time, the role of being transmitters of social, cultural, academic, and ethical values. This training maxim cannot be omitted or left for another time, much less in teacher training.

Ethical teacher behavior includes responsibilities related to justice, respect, empathy, attention, student care, and commitment, among other virtues, during the teaching process, recognizing the consequences of this ethical behavior and the transmission of those values-virtues [9] and what known as pedagogical ethical knowledge [10]. It includes the understanding of the responsibilities, rights, and obligations during the educational process, the knowledge of the possible impact and the consequences of appropriate or inappropriate behavior in the teaching process, and the knowledge of ethical inferences involved.

There are many investigations on the use of technologies in education but without taking into account the ethical considerations of their inclusion in the classroom. This is an issue of great importance since teachers must face the ethical challenges that the use of new modalities of access to information with technology can pose [11].

Official bodies and legal texts on priority digital skills in which teachers should be trained (UNESCO ICT Competence Framework; European Framework for Teacher Digital Competence (DigCompEdu); Common Framework for Teacher Digital Competence of the National Institute of Educational Technology and Teacher Training (INTEF)) seek to recognize the way in which ICT should be used and integrated into teaching, showing different training itineraries and identifying the needs of teachers for a correct inclusion of such tools in the classroom. In all these documents, there is already talk of the importance of the ethical dimension in the use of technological resources [12].

When research related to the correct inclusion of technologies in education is observed, ethics is highlighted as one more factor, to be taken into account in educational and training processes. For this reason, it must be borne in mind that ethical awareness is present in the teachers' approaches in relation to the right of access to technologies or to address issues of technology-based intellectual property. Also, the veracity of the information used and extracted with technology and achieving the security and privacy of students when they use technological resources is a priority [13].

The new post-pandemic scenario increases the importance of applying ethics in the use of educational technology in the classroom and in instructional design, presented as an added challenge to the educational context of the twentyfirst- century. The purpose of this research has been to analyze the ethical knowledge of teachers in training for the correct incorporation of technologies in the classroom through the TPACK model. For this, the ethical component has been included in the model and it has been assessed, through a questionnaire and personal interviews, adapted to the pandemic context, with bimodal teaching, in the faculty of education of a European university. The objectives can be specified in the following questions or study variables:

1. What training in ethics and professional ethics (PEK) in the use of technological resources (PTEK) do trainee teachers have?

2. What importance do future teachers attach to the ethical component in the use of knowledge (PEK) that is extracted through technological resources (PEK, EKDT, PTEK)?

3. What are the relationships between teachers' ethical knowledge and technological ethical knowledge (TEK)?

2. Characteristics of the context and the sample participating in the study

The research has been developed during four academic years: 2019–2020, 2020–2021, 2021–2022, and 2022–2023, in the learning context of a faculty of education of a European university. It should be noted that the research is located at a time of pandemic in which educational centers had opted for 100% remote teaching. In the specific case of the university where the study was carried out, the students received their training in the bimodal modality consisting of 50% of the students attending the classroom in person while the other 50% of the group received teaching virtually, through the platforms created by the institution for this purpose. Although this situation has been maintained over time throughout the first two academic years

studied, in the 2021–2022 academic year, teaching has returned to being fully face-to-face, which has allowed personal interviews with the participants in the study. This circumstance has meant having the direct and qualitative opinion of the teachers in training, enriching the results of the study carried out.

The sample object of the study has been selected in a non-probabilistic, directed, and intentional way [14]. It consists of 1051 participants, teachers in training, undergraduate (895 students), and postgraduate (156 students). The sample is considered significant with respect to the total existing population and is made up of 840 women (80%), 740 graduate (88%) and 100 postgraduate (12%), and 211 men (20%), 155 graduate (73%) and 56 postgraduate (27%). The age range is between 19 years and over 40 years.

3. Methodology

3.1 Design of the investigation

The work has been proposed from a descriptive approach, with a mixed methodology [15]. For its development, an exploratory research design has been used, based on the use of the questionnaire as an instrument for collecting information and the personal interview [2, 16]. The study process has been configured through different phases: firstly, a theoretical review was carried out on the Disciplinary Pedagogical Technological Knowledge model, reviewing research on the measurement of said E-A model, the concept of professional ethics for teachers (pedagogical ethics and measurements of ethical knowledge), virtual teaching, and previously developed studies on teacher digital competence (TDC); secondly, the instruments were designed and subsequently validated based on the collaboration of teachers from other national and international universities with experience in pedagogical ethics and teaching technological pedagogical competences; thirdly, based on the suggestions and qualifications of these experts, the research team carried out revisions of the items (modifications in the questions for a better understanding of the issues raised; unification of some items and the like); fourthly, the collection of information was carried out through the questionnaire, research instrument, and interviews; finally, the information collected was emptied and analyzed.

3.2 Data collection instruments

In this research, a cross-sectional quantitative methodological design of descriptive and inferential nature has been chosen. On the one hand, the questionnaire has been applied, adapted to the objectives of the study, and designed *ad hoc*, based on the one used by Yurdakul et al. [17] and Gómez-Trigueros [7], whose content has been validated by 21 experts from Spanish and international public universities, from categories ranging from professors to doctoral assistants.

Each researcher was asked to rate the importance and operability of each question using a 5-point scale (1, Strongly disagree, to 5, Strongly agree). They were also encouraged to provide suggestions for each question. Based on the comments received from the experts, the instrument was redesigned, which was made up of 17 items measured on a five-point Likert scale (1, Strongly disagree; 2, Disagree; 3, Neither agree nor disagree; 4, Agree; and 5, Totally agree), and organized into four dimensions or study variables: 1. Knowledge professional ethical (PEK) (items 4–6);

2. Knowledge technological ethical (TEK) (7–9); 3. Pedagogical technological ethical knowledge (PTEK) (items 10–13); and 4. Disciplinary technology ethical knowledge (EKDT) (items 14–17) (**Table 1**). In addition, the first part includes aspects related to the sociodemographic characteristics of the sample (items 1–3).

On the other hand, the interview is equally validated and made up of the same dimensions with a different wording so as not to condition the answers or provide training for the participants. The information obtained was subjected to an exploratory-comparative reading based on the available content, in order to identify the thematic lines and the possibilities of saturation of the different emerging categories (*f*) [18]. Next, from the constant comparison of the data, an open coding process of the transcripts was carried out. The codes obtained were grouped and organized, based on their connections, into study variables or subcategories and their selective group coding was carried out, integrated around four central analysis dimensions: professional-teacher ethical knowledge dimension; dimension of ethical knowledge of the use of technology; dimension of knowledge of the implementation of technology in the pedagogical task; and dimension of ethical knowledge of technology in disciplinary development.

Finally, after identifying the partial existence of more than one study variable in the statements expressed by the students, the analysis variables were coded and quantified using an ordinal scale from 1 to 3, where 1 represents a low level of

item	*M*[1]	*SD*[2]
PEK[3]		
4	2.09	0.68
5	2.24	0.65
6	2.31	0.66
TEK[4]		
7	4.98	0.48
8	4.96	0.41
9	4.94	0.50
PTEK[5]		
10	3.02	0.79
11	3.11	0.76
12	4.88	0.53
13	3.10	0.81
EKDT[6]		
14	4.94	0.52
15	3.03	0.88
16	4.96	0.52
17	4.97	0.49

M^1 = Mean; SD^2 =; PEK^3 = Professional ethical knowledge; TEK^4 = Technological ethical knowledge; $PTEK^5$ = Pedagogical technological ethical knowledge; and $EKDT^6$ = Ethical knowledge disciplinary technology.

Table 1.
Descriptive statistics (M, SD) of the research questionnaire.

approximation and 3 a high level of approximation. Level of approximation to the variable under study. This procedure allowed adjusting the explanatory trends of each emerging variable from a quantitative dimension. Analyzed variables are as follows:

1. Sociodemographic dimension: Item 1: sex (woman, man); item 2: age (between 18 and over 40 years); item 3: studies that I carry out (undergraduate or post-graduate).

2. PEK dimension: Item 4: I know what ethics and morality are applied to teaching; item 5: I am able to implement ethical and moral principles in the classroom, with my future students; item 6: I know how to act ethically in situations related to teaching and learning.

3. TEK dimension: Item 7: I know the problems of personal security, copyright, and access to information in the use of technologies; item 8: I believe that ICTs allow all citizens access to information, promoting equity among all; item 9: I pay attention to the problems related to the copyright of digital sources and make an ethical use of the information that appears on the Internet.

4. PTEK dimension: Item 10: I am able to guide students to use technologies and online educational resources ethically; item 11: I am capable of protecting the right of students to use ICT and Internet knowledge in an ethical manner; item 12: I am able to use ICT resources to perform my task as a future teacher in a safe and respectful manner; item 13: I am capable of transmitting ethical values related to the proper use of ICTs and content hosted on the Internet to my future students.

5. EKDT dimension: Item 14: I know that I must take into account and respect intellectual property when adapting content hosted on the Internet to create teaching materials; item 15: I know the ethical principles in relation to the use of digital resources for teaching; item 16: I will always use digital content and resources for the classroom that are not sexist, discriminatory or that include violence; Item 17: I will transmit ethical values and concepts related to justice, truth, and respect for diverse opinions.

In order to verify the reliability of the questionnaire, Cronbach's Alpha coefficient has been calculated [19]. The results obtained (questionnaire $\alpha = .921$) confirm the existence of a high and adequate internal consistency for the proposed study. In the same way, the Pearson Chi-Square index was found with results of p-value <1 = Sig. 0.001 [20], indicative of the high correlation between the questions posed, illustrative of the validity of the items, and the structure of the implemented instrument.

The second research instrument, the interview, has also been validated. For this, the Delphi method [21] was used. The stability of the results was achieved, after their consensus, after the administration of the evaluation instrument in two rounds, and after obtaining statistically reliable results. To use this method, two groups were formed: a coordinating group, which was made up of the researchers of the present study and those responsible for the design of the instrument, and an evaluator group of experts, the same ones that were used for the first instrument. In their analysis, the following were evaluated: the relevance and adequacy, the internal coherence and the importance of the questions that they intended to formulate, and their general

assessment of the construct on a scale of 1 to 10 points. Also, a reliability and internal consistency analysis of the total scale (α = .901) was carried out.

3.3 Procedure

In relation to the procedure, the questionnaire was administered to the entire sample through a link that is hosted in the free Google Forms application, during the first quarter of each of the academic courses analyzed (from September to December). The students received the questionnaire through their institutional mail from the university and were informed of the objective of the research, as well as the confidentiality of the responses.

For their part, semi-structured personal interviews have been carried out. The selection and application of the interview technique had the objective of obtaining personalized information on the attitudes and representations of the components of professional ethics and ethics with technology and pedagogy of the participants. The application of this technique was complemented with the completion of the above-meaning questionnaire, in order to construct meanings and deepen the interpretation of the individual perceptions of the students [22]. The interviewees were summoned by institutional email; they were carried out in the faculty of education of the same university institution throughout the third and fourth week of November of all the school years of the study. For the first two academic years analyzed (2019–2020 and 2020–2021), the interviews were conducted through the Google Meet program; in the case of the 2021–2022 and 2022–2023 academic years, the latter still under development, the interviews have been carried out in person. Both in the emails and at the beginning of the interview, the participants were informed about the conditions in which it would take place, the research objectives, and its duration: 55 minutes. After the explanation of the research purpose, the participants were reminded of the confidentiality and anonymity with which the data obtained would be processed and interpreted and that, in addition, they would be recorded in audio. A total of 522 students out of the total 1.051 called (n = 1.051) participated in the interviews.

In order to respond to the research objectives, both descriptive analyzes (means = M and standard deviation = SD) have been carried out, using the statistical program Statistical Package for Social Sciences (SPSS Statistics) in its version 25 for Windows as a tool.

The instruments used and the procedure designed in this study have been approved by the ethics committee of the university institution where the research was carried out (File UA-2021-2108-27).

4. Results

4.1 Descriptive analysis

The results of the descriptive statistics (M = Mean; SD = Standard Deviation) of each one of the dimensions (**Table 1**) underline, in the first place, the weak training of the participants in relation to key concepts, related to professional teaching ethics. Thus, in the dimension of professional ethical knowledge (PEK), the response values show little or no training of the participants and little preparation to apply ethical principles in educational processes; with mean values around 2 (Disagree) ($M \leq 2.33$) and a mean dispersion of the responses issued low $SD \leq 0.58$).

The results of the descriptive statistics (*M; SD*) of each of the dimensions analyzed (**Table 1**) show a weak training of teachers in training on key concepts related to professional teaching ethics. In the dimension of professional ethical knowledge (PEK), responses very close to value 2 of the Likert scale "Disagree" ($M \leq 2.31$) are obtained. This result indicates the poor preparation of teachers in training on ethical principles in the teaching and learning processes.

The values obtained in the technological ethical knowledge (TEK) dimension related to the participants' perception of their ethical knowledge in the use of technologies present responses close to value 5 (Strongly agree) ($M \geq 4.94$; $SD \leq 0.50$). These results indicate the high perception of teachers in training on ethical issues related to safety in the use of ICT resources (item 7); copyright in relation to content hosted on the Internet (item 9); and the importance of technological resources for the development of society in the context of the 21st century (item 8).

In the pedagogical technological ethical knowledge (PTEK) dimension, the values show the negative perception of the participants about their ability to guide students in the ethical use of technologies; in the protection of their rights, and in the transmission of ethical values in the E-A process ($M \leq 3.11$; $SD \geq 0.76$). For its part, this same dimension yields positive values, which are close to response option 5 (Strongly agree) when asked about your capacity for the ethical use of ICT resources, as a teacher (item 12, $M = 4.88$; $SD = 0.53$).

The values obtained for the fourth dimension ethical knowledge disciplinary technology (EKDT), the sample considers that it has sufficient knowledge about respect for the intellectual property of digital content and resources; and that it has the capacity to discriminate against nonsexist, discriminatory, or violent materials. In the same way, he perceives himself with the capacity to transmit values such as justice, truth, and respect for diverse opinions with his teaching practice ($M \geq 4.83$; $SD \leq 0.58$).

It is important to highlight the answers obtained in item 15 "I know the ethical principles in relation to the use of digital resources for teaching." Their responses show that teachers in training do not recognize ethical principles in the use of technology for teaching with response values close to 3 "Neither agree nor disagree" ($M = 3.03$; $SD = 0.88$) indicative of the need to address this training in future teachers.

5. Discussion and conclusions

The current educational context offers challenges and possibilities for teachers. The post-pandemic situation has given the green light for the massive inclusion of technologies in training. Universities and training centers for future teachers have the challenge of offering a level of instruction that educates in disciplinary, pedagogical, and technological content. The researchers found that the TPACK teaching and learning model offers ample possibilities to develop training in teacher digital competences. It helps the correct inclusion of technologies in the classroom and a better understanding of ICT resources for teaching.

It is, therefore, a priority to harmonize education systems and guidelines for activities related to the principles of ethics. In the specific case of technologies, the use of these tools in an equitable, fair, and responsible manner is proposed as a measure to achieve an improvement in the quality of world education. It is a priority to pay special attention to ethical knowledge in teacher training, understood as behavior

based on values of justice, equity, truth, and responsibility in the use of technology in teaching and learning environments [8].

The results of this research confirm the lack of training in the professional ethical knowledge of the students of the analyzed university. These values indicate the need for training in the understanding of ethics in the classroom and coincide with the other research [17] where it is stated that teachers must have, in addition to knowledge of the subject, pedagogical knowledge and technological knowledge, a preparation in ethics for teaching.

The need to resolve issues related to aspects related to how the teacher guides the use of digital resources in the classroom is highlighted. The data obtained in this work show that teachers in training are aware of the importance of the safe use of content hosted on the Internet; the importance of respecting the authorship of the contents; and the need to make responsible use of these contents, but they are unaware of the pedagogy to carry out this task in their professional activity. These results coincide with other studies on technology and teaching [12, 13] where the importance of ethical use of ICT tools is emphasized.

Finally, this research wants to point out the importance of teacher training in issues related to teaching ethics in the use of technologies, in the new post-pandemic context. It is urgent to carry out a correct preparation of our teachers in order to generate an ethical use of digital tools, which allow a formation of citizens of the information society and communication competent in ICT.

Acknowledgements

This research is sponsored and financed by the Department of Innovation, Universities, Science and Digital Society of the Generalitat Valenciana 2021, and is part of the call for grants from the Program for the Promotion of Scientific Research, Technological Development and Innovation in the Valencian Community 2021 XX to support and promote the activity of emerging R + D + I groups (DOGV n°8959, 2021). Under this call, the work presented here is the result of the emerging group project (GV/2021/077): The digital gender gap and the TPACK model in teacher training: analysis of digital teacher training, coordinated by Dr. Isabel María Gómez Trigueros (University of Alicante).

Conflict of interest

"The authors declare no conflict of interest."

Author details

Isabel María Gómez-Trigueros
University of Alicante, Alicante, Spain

*Address all correspondence to: isabel.gomez@ua.es

IntechOpen

References

[1] Zhu X, Liu J. Education in and after Covid-19: Immediate responses and long-term visions. Postdigital Science and Education. 2020;**2**:695-699. DOI: 10.1007/s42438-020-00126-3

[2] Gómez-Trigueros IM, Ponsoda S, Díez R. Towards an insertion of technologies: The need to train in digital teaching competence. International and Multidisciplinary Journal of Social Sciences. 2021;**10**(3):64-87. DOI: 10.17583/rimcis.8652

[3] Ortega-Sánchez D, Gómez-Trigueros IM, Trestini M, Pérez-González C. Self-perception and training perceptions on teacher digital competence (TDC) in Spanish and French University Students. Multimodal Technologies and Interaction. 2020;**4**(4):74. DOI: 10.3390/mti4040074

[4] Shulman LS. Those who understand: Knowledge growth in teaching. Educational Researcher. 1986;**15**(2):4-14

[5] Mishra P, Koehler MJ. Technological pedagogical content knowledge: A framework for teacher knowledge. Teachers College Record. 2006;**108**(6):1017-1054

[6] Atun H, Usta E. The effects of programming education planned with TPACK framework on learning outcomes. Participatory Educational Research (PER). 2019;**6**(2):26-36. DOI: 10.17275/per.19.10.6.2

[7] Gómez-Trigueros IM. Digital teaching competence and space competence with TPACK in social sciences. International Journal of Emerging Technologies in Learning (iJET). 2020;**15**(19):37-52. DOI: 10.3991/ijet.v15i19.14923

[8] Gómez-Trigueros IM. The digital gender gap and the TPACK model in teacher training: Training analysis. In: Gómez Trigueros IM, Ortega Sánchez D, García Cobas R, editors. Brecha digital de género y coeducación: claves conceptuales y orientaciones metodológicas. Madrid: Aula Magna Proyecto Clave McGraw Hill; 2021:15-40

[9] Gao T, Siegel P, Johar JS, Sirgy MJ. A survey of management educators' perceptions of unethical faculty behavior. Journal of Academic Ethics. 2008;**6**:129-152. DOI: 10.1007/s10805-008-9062-z

[10] Gómez-Trigueros IM, Ortega-Sánchez D. El conocimiento ético profesional docente y su presencia en la inclusión de las tecnologías en el contexto educativo presente. Edutec. Revista Electrónica De Tecnología Educativa. 2022;**80**:149-163. DOI: 10.21556/edutec.2022.80.2345

[11] Ghiațău RM, Mâță L. Factors influencing higher education teachers' attitudes towards unethical use of information technology: A review. Revista Romaneasca pentru Educatie Multidimensionala. 2019;**11**(1):287-300. DOI: 10.18662/rrem/111

[12] Cabero-Almenara J, Barroso-Osuna J, Palacios Rodríguez A, Llorente-Cejudo C. Marcos de competencias digitales para docentes universitarios: su evaluación a través del coeficiente competencia experta. Revista Electrónica Interuniversitaria de Formación del Profesorado. 2020;**23**(3):17-34. DOI: 10.6018/reifop.414501

[13] Asamoah MK. TPACKEA model for teaching and students' learning. Journal of Academic Ethics. 2019;**17**:401-421. DOI: 10.1007/s10805-019-09326-4

[14] Argibay JC. Muestra en investigación cuantitativa. Subjetividad y Procesos Cognitivos. 2009;**13**(1):13-29 Available from: http://www.redalyc.org/articulo.oa?id=339630252001

[15] Sánchez-Gómez MC, Rodrigues AI, Costa AP. Desde los métodos cualitativos hacia los modelos mixtos: Tendencia actual de investigación en ciencias sociales. Revista Ibérica de Sistemas e Tecnologias de Informação. 2018;**28**:9-13. DOI: 10.17013/risti.28.0

[16] Pardo A, Ruiz MA, San-Martín R. Análisis de datos en ciencias sociales y de la salud I. Madrid: Síntesis; 2015. p. 410

[17] Yurdakul IK, Odabasi HF, Kilicer K, Coklar AN, Birinci G, Kurt AA. The development, validity and reliability of TPCK-deep: A technological pedagogical content knowledge scale. Computers & Education. 2012;**58**(3):964-977. DOI: 10.1016/j.compedu.2011.10.012

[18] Corbin J, Strauss A. Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory. 4th ed. United States: Sage; 2014. p. 456

[19] Raykov T, Marcoulides GA. Ecuation of true criterion validity for unidimensional multicomponent measuring instruments in longitudinal studies. Structural Equation Modeling. 2017;**24**(4):599-608. DOI: 10.1080/10705511.2016.1172486

[20] Cohen L, Manion L, Morrison K. Research Methods in Education. 8th ed. London: Routledge; 2017. p. 944. DOI: 10.4324/9781315456539

[21] Landeta J. El método Delphi. In: Una técnica de previsión para la incertidumbre. 2nd ed. Barcelona: Ariel; 2002. p. 223

[22] Zohrabi M. Mixed method research: Instruments, validity, reliability and reporting findings. Theory and Practice in Language Studies. 2013;**3**(2):254-262. DOI: 10.4304/tpls.3.2.254-262

Chapter 14

Perspective Chapter: A Phenomenological Study of an International Class Program at an Indonesian University

Zainal Asril, Engkizar, Syafrimen Syafril, Zainul Arifin and K. Munawir

Abstract

This study intends to shed light on the issues with Indonesian institutions' foreign class programs. This study was conducted utilizing qualitative techniques and a phenomenological framework. Participatory observation and document analysis were used to collect data over the academic years 2019–2020–2021. Additionally, 42 informants (leaders in higher education, instructors, international students, and foreign students) who were chosen using the purposive sample approach were the subject of in-depth interviews. Using NVIVO 12.0 Software and the Milles & Huberman interactive model analysis approach, all observational data, documents, and interviews were thematically evaluated. The study's findings revealed four factual issues with the international class program at Indonesian tertiary institutions, including the following: (i) some of these institutions do not have a permanent international standard curriculum; (ii) students' English proficiency is low; (iii) international standard lecturer competence is not yet complete; and (iv) inadequate infrastructure and learning support services. These results provide tertiary institutions running international class programs with information and assessment materials to address these four issues. However, it is important for colleges hosting courses with students from other countries to be able to correctly prepare the four instruments mentioned above, preventing similar issues from occurring in the future.

Keywords: phenomenology international class program, Indonesian higher education, World Class University, learning support facilities, higher education

1. Introduction

The education sector must be prioritized in order to generate a superior generation capable of global competitiveness if Indonesia is to become a golden nation in 2045 [1]. To accomplish this aim, the government must adopt strategic policies that will allow Indonesia's educational system to compete with those of industrialized nations worldwide [2]. Four strategic policies have been prepared by the Ministry of

Education and Culture of the Republic of Indonesia as a basis for future national education direction and policies. (i) The availability of educational scholarship programs at the undergraduate, master's, and doctorate levels domestically and abroad for students, scholars, instructors, lecturers, practitioners, researchers, and members of the public with specialized knowledge is one of the four techniques. (ii) Development of better educational infrastructure, including the construction of schools, representational study spaces, full laboratory setups, digital libraries, student reading gardens, and other educational amenities. (iii) "Freedom of learning" curriculum adjustments from elementary school to tertiary level; and (iv) annual increases in the education budget of twenty percent (20%) of the entire state budget [3].

The four strategic policies mentioned above demonstrate how seriously the Indonesian government takes its management of the education sector as both an investment in the future and a national resource. Indonesia's dreams and desires to join the industrialized nations of the globe may undoubtedly be realized in the coming years if the education sector is managed efficiently [4]. If it is carried out with a collaborative idea between the government, the community, institutions, or NGOs active in education [5], this dream will undoubtedly come true. Additionally, consistency is required as a shared commitment so that the planned program does not end in the middle of its course even when the goal has not been adequately attained [6]. Additionally, a tool is required to assess how successful the performance accomplishments have been and where they still need to be improved in order to accurately evaluate the outcomes of their implementation [7, 8]. Last but not least, if a program is not continued throughout time, it will not yield good and genuine outcomes [9].

Speaking about progressive education, it goes without saying that you should look to and take lessons from nations with exceptional and cutting-edge educational systems. I'll use the top 10 educational systems in the world now as an example: Finland, England, the United States, Canada, Australia, the Netherlands, Germany, Japan, Ireland, and Denmark [10–15]. According to study findings, development in the nation's educational system is attained via hard effort, transparency, teamwork, sustainability, and a system of assessment that measures progress in an academic and scientific manner [16–19]. Even the educational systems in these 10 nations were developed after a variety of extensive research projects before being implemented at the technical level in the field [20, 21]. In order to ensure that the anticipated educational achievements are successfully attained, the Indonesian Ministry of Education and Culture must specifically refer to and learn from the system employed by the developed nations mentioned above.

Regarding the issue of this study, which is the implementation of international class programs in Indonesian tertiary institutions. Many of Indonesia's top universities, including Gadjah Mada University, University of Indonesia, Bandung Institute of Technology, IPB University, Airlangga University, Sepuluh Nopember Institute of Technology, University of North Sumatra, Andalas University, Brawijaya University, Padjadjaran University, Diponegoro University, Hasanuddin University, have international class programs in place for 10 years. Islamic postsecondary schools, such Syarif Hidayatullah State Islamic University Jakarta, Raden Intan Lampung State Islamic University, and Imam Bonjol Padang State Islamic University, among others, also provide lessons in other countries. Each higher institution gives the international class a different name, such as accelerated, superior, intense, or bilingual classes.

Despite the fact that the international class program has been running for 10 years. Based on research and evaluations by educational professionals, the international class program has generally been operating well in a number of tertiary institutions. However, in a number of these institutions, the program has not produced the desired

results, and new issues frequently arise that affect both the organizing university and the students who participated [22]. The authors will perform study on this phenomenon specifically for 3 years (2019–2021).

2. Literature review

The international class program is one way for universities to achieve world-class status. In addition, this program is one of the tools used by global higher education ranking organizations like QS World University Rankings, Webometrics, Unirank, and Times Higher Education to evaluate universities [23, 24]. Every year, these organizations will publish world university rankings following an evaluation of a tertiary institution's reputation among academics, employers, faculty student ratio, citations per faculty, international faculty, international students, and international programs [25–28]. This implies that one of the ranking criteria includes the international class program.

According to a study the author did based on the QS World University Rankings list from 2017 to 2021, which relates to the growth of the ranking of Indonesian universities at the global level, the ranking of Indonesian institutions has shown good improvement every year. Ten universities, including the University of Indonesia, Bandung Institute of Technology, Gadjah Mada University, Airlangga University, IPB University, November 10 Institute of Technology, Diponegoro University, Brawijaya University, Padjadjaran University, Bina Nusantara University, and Muhammadiyah University Surakarta, are among those with rankings between 300 and 1000 among all universities worldwide, according to the data. Naturally, this accomplishment demonstrates the international competitiveness of Indonesian colleges. The information is displayed in **Figure 1** below.

According to the statistics above, a number of university administrators (chancellors) claimed that the international class program is the reason why their institution is included among the top universities in the world. A postsecondary university's

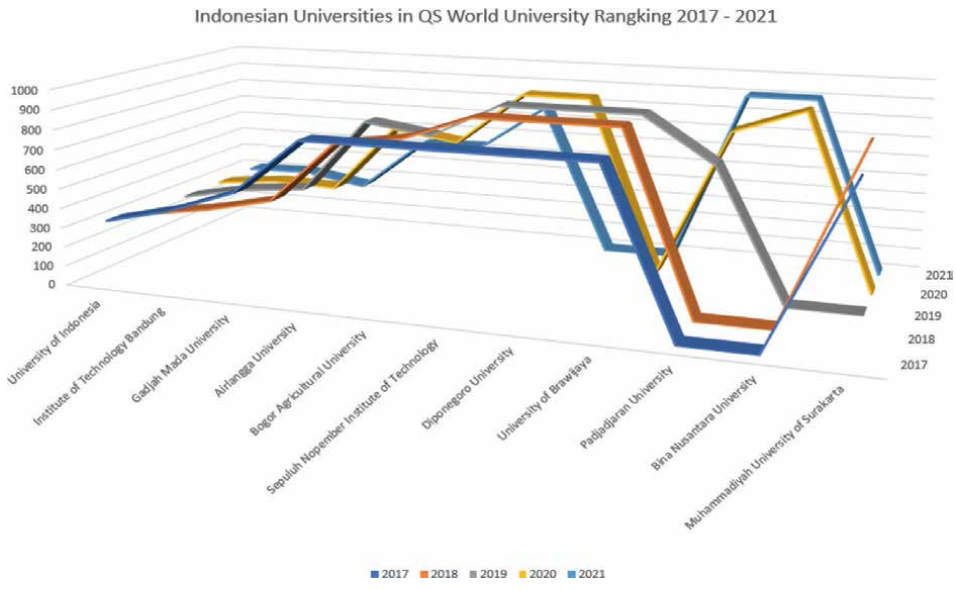

Figure 1.
Ranking of Indonesian universities in QS World University Rankings 2017–2021.

international class program has led to a rise in the number of foreign students, professors, and researchers working with the local tertiary institution as in the extracts from interviews with other university presidents below:

> *We have opened international classes for seven years, this program has opened opportunities for students, lecturers and researchers from around the world to collaborate with lecturers and researchers on this campus... we are implementing this program with the aim of raising the ranking of our universities to the world level,... [informant G, 2017]. To raise our university ranking we have opened an international class program from 2012, now you can see the results by increasing our university rankings every year... [informant T, 2021].*

If the interview excerpt from above is examined, it becomes evident that one strategy to boost a university's standing to the international level is to create an international class program there. However, for a program to be successful, everyone involved must share a commitment to see the goals stated through to completion.

3. Methodology

This study was conducted utilizing qualitative techniques and a phenomenological framework. Participatory observation and document analysis were used to collect data over the academic years 2019–2020–2021. Additionally, 42 informants (leaders in higher education, instructors, international students, and foreign students) who were chosen using the purposive sample approach were the subject of in-depth interviews. The Milles & Huberman technical analysis interactive model was used to evaluate all observational data, documents, and interviews thematically with the use of NVIVO 12.0 Software.

4. Findings and discussion

There are four issues or phenomena that arise in the international class learning process, according to the analysis of the author's interviews with 45 lecturers and students, which is then supported by observational data and analysis of various documents of student study results in each semester after participating in the international class program. There are four issues: (i) no permanent international standard curriculum in some tertiary institutions; (ii) low English proficiency among students; (iii) incomplete international standard lecturer competence; and (iv) insufficient learning support resources and infrastructure, as seen in **Figure 2** below.

According to the issues covered, the four concerns identified in this study will be examined using theory, professional perspectives, and interview excerpts.

4.1 Lacks an ongoing curriculum that adheres to international standards

Generally speaking, the curriculum consists of a set of rules that must be followed in order for the learning process to be successful [29, 30]. When an international class program is established, the usage of a global standard curriculum must be developed as the first tool. This curriculum is unquestionably quite different from regular courses. This difference can be observed in several ways, including the

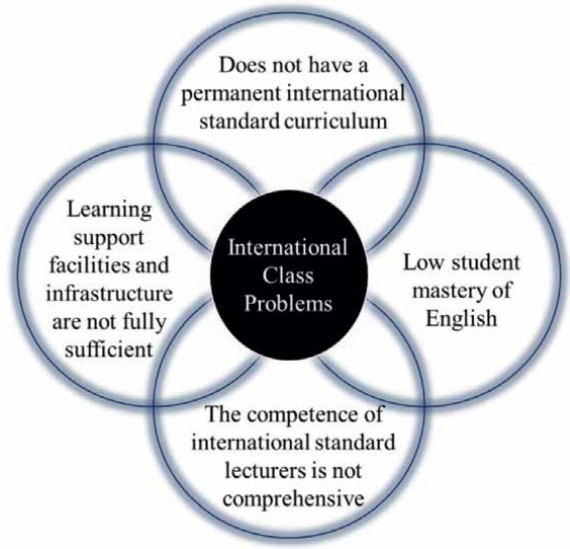

Figure 2.
Problems of international class in Indonesian universities.

following: (i) using English as a primary language of instruction; (ii) encouraging students to think critically and openly; (iii) having strong soft and hard skills in the scientific field of their choice; (iv) being at the forefront of technology mastery; (v) being able to conduct research; and (vi) being aware of environmental concerns and current issues in a variety of scientific disciplines and (vii) being able to compete in the national and global world of work.

The seven international curriculum requirements mentioned above have not been well satisfied, according to the authors' study of many curriculum materials used by foreign classes in Indonesian tertiary institutions. Even delivering lecture assignments to students at home rather than having them practice in a lab or do field research is prioritized by the curriculum, which still tends to limit students to thinking at the cognitive level and memorization of subject matter knowledge. As a consequence, students who take part in the international class program lack the opportunity to develop their critical thinking abilities and other needed soft and hard skills since the curriculum is still teacher-centered, turning the educational process into a platform for lecturers.

Some of the students interviewed by the authors also stated that, the international class program curriculum should be oriented towards assignment curriculum development, but in fact it is still more oriented towards curriculum assignment. In fact, one of the international class foreign students at a tertiary institution stated that the university where he was studying was called an assignment university, even though according to him it should have gone to a research university. As the following interview excerpt:

> *,... the applied curriculum requires more students to memorize subject matter, not to do research, even though research is important to hone our [informant, YY] skills,... I think this is a university assignment because each course requires me to complete one to three assignments,... I actually hoping for more practice [informant KZ].*

The above-mentioned facts make it obvious that the curriculum for foreign class programs has to be rebuilt. The in issues curriculum is capable of meeting

the seven previously mentioned worldwide curriculum criteria. However, in the author's opinion, a thorough investigation is required before a curriculum is created in order for the curriculum design to be evaluated academically and scientifically.

4.2 Low English proficiency among students

As is common knowledge, English is used as the primary language of instruction in international classrooms. Because the fundamental prerequisite is the mastery of the aspects of competency in speaking, reading, listening, and writing English, not all students who have the desire and interest to pursue this program may enroll. However, prior studies revealed that overseas students' English language proficiency was only at a low and moderate level at a number of Indonesian universities [31–33]. Even now, pupils still have a poor level of proficiency in the English language. After administering an English competence exam to students enrolled in foreign classes, the author discovered this phenomenon. In fact, there are still students who stammer and are not fluent in speaking English, it is not appropriate to read English text sentences, they do not understand enough when listening to English conversations or videos and have very low abilities when writing in English.

The aforementioned phenomenon is indeed quite astounding since it begs the question of how a student in an international class can attend lectures when their English language proficiency is subpar. Despite the fact that English is the primary language of instruction in international classes. Due to the fact that the learning objectives were not met and students tended to remain inactive throughout the learning process, it is only logical that some of the lecturers the authors questioned claimed that the international class program appeared to be unsuccessful. If the learning environment is as stated above, it is evident that the international class program's accomplishments are much below what is anticipated.

Of course, in response to the issues raised above, it is vital to determine whether the issue's root causes exist. After conducting interviews with students, the authors identified a number of factors that contributed to the students' poor English proficiency, including the following: (i) there were no specialized intensive English classes from the tertiary institution before students joined the international class program; (ii) they lacked sufficient preparation and proficiency in English before entering college high; (iii) English is still seen as challenging and even less desirable; (iv) is not supported by an environment that can practice English as a daily language or academic language during lectures.

Precisely according to the author's analysis there are several solutions in solving this problem; first, universities must conduct a more stringent selection of students who will take part in international classes, meaning that this program may be attended by students with above average (advanced) English skills in the aspects of speaking, listening, reading and writing skills; second, holding intensive English special classes for international class students on an ongoing basis; third, there are rules and obligations on the part of universities to make English the daily and academic language for international class students, so that students are accustomed to and can hone their English skills in campus life and academic classrooms; fourth, holding mandatory days of communication using English for the entire academic community, at least 3 days a week to support the internationalization of language in the campus environment.

4.3 International standard instructors' levels of expertise are not all-encompassing

The position of the lecturer plays a strategic role in the success of various tertiary programs as a member of the professional teaching staff in postsecondary institutions, particularly in terms of aspects of effective classroom learning. A person can join the teaching faculty at a tertiary institution in Indonesia provided they meet four competency requirements, namely pedagogical, professional, personal, and social competence. Additionally, instructors must satisfy the minimal educational prerequisites for a master's degree in the subject area they are most interested in. According to the author's research, lecturers who teach in foreign classes in Indonesian tertiary institutions have generally complied with the rules and regulations established by the government.

The four lecturer competency criteria set out by Indonesian ministries are, of course, still national in scope and are not acknowledged worldwide. According to the author, universities should define unique competency requirements for lecturers who will teach in foreign classrooms. The required criteria must be met in order for the standards to be accepted by internationally renowned educators. English, French, Arabic, Russian, Spanish, and Mandarin are the six official languages of the world. International standard lecturers also have the following categories and abilities: (i) minimum education level qualifications of doctoral graduates; (ii) command of one of these languages; (iii) proficiency with technology; and (iv) high soft and hard skills in the subjects taught, (v) have research experience and have publications that are internationally recognized, (vi) have academic networks with the international world, (vii) be open minded to current changes, (viii) be sensitive to issues that occurs in the midst of society [34–38].

According to the author's data analysis, if the competency standards of lecturers instructing international classes at Indonesian tertiary institutions are evaluated using the aforementioned standard scale for international lecturers, it becomes clear that they still do not meet the categories and conditions that they should. The educational background, publications, teamwork and familiarity with cutting-edge technologies all attest to this reality. The qualifications of lecturers who teach in other countries are still master degrees, according to records on lecturer statistics from many academic institutions. Furthermore, the number of research projects that result in the publishing of globally renowned scientific articles is still relatively low; some professors even lack any foreign publications. The same is true of lecturers' lack of expertise working with researchers and global networks. Another problem, even one that is frequently mentioned among students, is one that is connected to the limited skill of lecturers utilizing modern technologies [39, 40].

However, the lecturer's ability to speak one of the official languages of the globe, particularly English, as well as his or her openness to modern change and sensitivity to social concerns have enabled him or her to fall within the desired category. However, the leadership of higher education as well as the concerned lecturer must be worried about the low level of lecturers in meeting other requirements. Because lecturers should always strive to increase their own competency in a variety of abilities, they can meet requirements for professionals that are acknowledged globally [41, 42].

4.4 Learning support facilities and infrastructure are not sufficient

One of the tools to ensure a program's success in higher institutions is the provision of suitable facilities and infrastructure [43, 44]. According to the findings of

the author's interviews with students and lecturers, some of the issues encountered include the following: (i) the lack of a smart classroom, despite the fact that this facility is crucial to support learning, even the study rooms that are currently available are still regular classes; (ii) the lack of fully functional practical tools and materials required for study in the laboratory room, limiting students' access and mobility to conduct research because of the number of such tools and materials (iii) does not yet have a library with complete collections related to the field of science being taken, while international class students require a high level of literacy to enrich their reading, literature, insights and the latest information in various fields of science.

Students who enroll in the international class program must be well qualified in both their chosen field of expertise's hard and soft skills [45]. Students must put in substantial effort in order to achieve these goals and satisfy their ambitions so that they can graduate as professionals [46, 47]. Students who complete international class programs are also anticipated to be capable of competing in the global job market. On the other hand, higher education as an organization that plans international class programs, of course, needs to assess as well as improve in modernizing different facilities connected to the international class programs that have been put into place. In other words, the problem of limited learning facilities and infrastructure will certainly become an obstacle to the good implementation of this program if it is not immediately addressed.

5. Conclusion

One of the tools for creating a tertiary institution of the highest caliber is an international class curriculum. English is utilized for instruction, there are comprehensive learning facilities available, there are a large number of foreign lecturers from different countries, and the curriculum is of an international quality. The Ministry of Education and Culture of the Indonesian Government has demonstrated a genuine commitment to raising the caliber of Indonesian institutions to that of World Class Universities (WCU). The fact that lessons are held in other countries at several of Indonesia's top institutions serves as a glaring example of this mentality. The program, however, requires development in a number of areas, including the following: first, undertake a screening process for students who participate in the program and lecturers who specifically teach English skills, to ensure that there are no barriers to learning in the classroom. Fourth, increasing collaboration between universities, lecturers, and students with various foreign universities so that collaboration is established to add insight and experience, fifth, producing graduates who have multi-skills so that they can be used in the local and international workforce, and sixth, improving learning facilities such as laboratories, access to adequate electronic reading, and libraries.

Acknowledgements

The author would like to extend their gratitude to all parties, particularly the participants in the research collaboration, university administrators, informants who took the time to participate in the interviews, respondents who completed the questionnaire, and education professionals who offered feedback on, suggestions for improvement on, and criticisms of this paper. We want to carry out similar study in more situations and on additional topics in the future.

DOI: http://dx.doi.org/10.5772/intechopen.110325

Author details

Zainal Asril[1*], Engkizar[2], Syafrimen Syafril[3], Zainul Arifin[4] and K. Munawir[5]

1 Department of Islamic Early Childhood Education Undergraduate Program, State Islamic University of Imam Bonjol, Padang, Indonesia

2 Department of Islamic Education, Padang State University, Padang, Indonesia

3 Department of Islamic Early Childhood Education Undergraduate Program, Raden Intan State Islamic University of Lampung, Lampung, Indonesia

4 Department of Arabic Language Education, State Islamic University of Imam Bonjol, Padang, Indonesia

5 Department of Islamic Education, Alauddin State Islamic University Makassar, Makassar, Indonesia

*Address all correspondence to: zainalasril@uinib.ac.id

IntechOpen

References

[1] Kristiansen S. Decentralising education in Indonesia. International Journal of Educational Development. 2006;**26**(5):513-531. DOI: 10.1016/j.ijedudev.2005.12.003

[2] Pambudi NA, Harjanto B. Vocational education in Indonesia: History, development, opportunities, and challenges. Children and Youth Services Review. 2020;**115**:105092. DOI: 10.1016/j.childyouth.2020.105092

[3] Sukmayadi V, Yahya A. Indonesian education landscape and the 21st century challenges. Journal of Social Studies Education Research. 2020;**11**(4):219-234. Available from: https://www.learntechlib.org/p/218538/

[4] Suryadarma D, Jones GW, editors. Education in Indonesia. Singapore: Institute of Southeast Asian Studies; 2013

[5] Suprapto N, Prahani BK, Cheng TH. Indonesian curriculum reform in policy and local wisdom: Perspectives from science education. Jurnal Pendidikan IPA Indonesia. 2021;**10**(1):69-80. DOI: 10.15294/jpii.v10i1.28438

[6] Ismail Hanif Batubara SPI. Kurikulum Di Negara Maju. Medan: Umsu Press; 2021

[7] Nastiti FE, Ni'mal'Abdu, A. R. Kesiapan pendidikan Indonesia menghadapi era society 5.0. Jurnal Kajian Teknologi Pendidikan. 2020;**5**(1):61-66. DOI: 10.17977/um039v5i12020p061

[8] Megawanti P. Meretas permasalahan pendidikan di Indonesia. Formatif: Jurnal Ilmiah Pendidikan MIPA. 2015;**2**(3):227-234. DOI: 10.30998/formatif.v2i3.105

[9] Chairawati F. Evaluasi pembelajaran pada kelas internasional fakultas dakwah IAIN Ar-Raniry. Jurnal Al-Bayan: Media Kajian dan Pengembangan Ilmu Dakwah. 2014;**20**(1):15-32. DOI: 10.22373/albayan.v20i29.113

[10] Li Z. Critical thinking cultivation in Chinese learning classes for international students during the COVID-19 pandemic. Thinking Skills and Creativity. 2021;**40**:100845. DOI: 10.1016/j.tsc.2022.101079

[11] House SK, Nielsen K, Dowell S. International collaboration using collaborative online international learning (COIL)/globally networked learning (GNL) model. Teaching and Learning in Nursing. 2022;**17**(4):421-424. DOI: 10.1016/j.teln.2022.06.010

[12] Ma J, Wen Q. Understanding international students' in-class learning experiences in Chinese higher education institutions. Higher Education Research & Development. 2018;**37**(6):1186-1200. DOI: 10.1080/07294360.2018.1477740

[13] Wong A. Classroom response systems and student performance improvement: Local versus international students. Journal of Teaching in International Business. 2016;**27**(4):197-208. DOI: 10.1080/08975930.2017.1302393

[14] Ragavan SK. The role of an international student tutor in a UK law school: A case study. The Law Teacher. 2009;**43**(3):246-268. DOI: 10.1080/03069400903371825

[15] Jones E. Problematising and reimagining the notion of 'international student experience'. Studies in Higher Education. 2017;**42**(5):933-943. DOI: 10.1080/03075079.2017.1293880

[16] Shah M, Mahadevan K, Cheng M. Poaching international students? A

study of an Australian university with metropolitan campuses. Perspectives: Policy and Practice in Higher Education. 2022;**26**(1):28-37. DOI: 10.1080/13603108.2021.1958265

[17] Arthur N. Supporting international students through strengthening their social resources. Studies in Higher Education. 2017;**42**(5):887-894. DOI: 10.1080/03075079.2017.1293876

[18] Coates N, Dickinson J. Meeting international postgraduate student needs: A programme-based model for learning and teaching support. Innovations in Education and Teaching International. 2012;**49**(3):295-308. DOI: 10.1080/14703297.2012.703018

[19] Glass CR, Gesing P, Hales A, Cong C. Faculty as bridges to co-curricular engagement and community for first-generation international students. Studies in Higher Education. 2017;**42**(5):895-910. DOI: 10.1080/03075079.2017.1293877

[20] Guo Y, Guo S. Internationalization of Canadian higher education: Discrepancies between policies and international student experiences. Studies in Higher Education. 2017;**42**(5):851-868. DOI: 10.1080/03075079.2017.1293874

[21] Goodwin K, Mbah M. Enhancing the work placement experience of international students: Towards a support framework. Journal of Further and Higher Education. 2019;**43**(4):521-532. DOI: 10.1080/0309877X.2017.1377163

[22] Widiasih R, Hermayanti Y. International students' experience of studying at Indonesian universities: A systematic review. Journal of International Students. 2020;**10**(S3):24-43. DOI: 10.32674/jis.v10iS(2).2710

[23] Balatsky EV, Ekimova NA. Global competition of universities in the mirror of international rankings. Herald of the Russian Academy of Sciences. 2020:**90**(4):417-427. DOI: 10.1134/S1019331620040073

[24] Bijsmans P, Schakel AH, Baykal A, Hegewald S. Internationalisation and study success: Class attendance and the delicate balance between collaborative learning and being lost in translation. European Journal of Higher Education. 2022;**12**(3):314-331. DOI: 10.1080/21568235.2021.1971099

[25] Zech ST, Rublee MR, Deejay A, Flanik WM. Active learning and the graduate classroom: How gender and international student status affect preferences and experiences. Journal of Political Science Education. 2022;**18**(1):22-34. DOI: 10.1080/15512169.2021.1996383

[26] Kamens DH, Benavot A. National, regional and international learning assessments: Trends among developing countries, 1960-2009. Globalisation, Societies and Education. 2011;**9**(2):285-300. DOI: 10.1080/14767724.2011.577337

[27] Chapman DD. The ethics of international service learning as a pedagogical development practice: A Canadian study. Third World Quarterly. 2018;**39**(10):1899-1922. DOI: 10.1080/01436597.2016.1175935

[28] Eaves M. The relevance of learning styles for international pedagogy in higher education. Teachers and Teaching. 2011;**17**(6):677-691. DOI: 10.1080/13540602.2011.625143

[29] Neal MB, Cannon M, DeLaTorre A, Bolkan CR, Wernher I, Nolan E, et al. Addressing the needs of Nicaraguan older adults living on the edge: A university–community partnership

in international service-learning. Gerontology & Geriatrics Education. 2017;**38**(1):119-138. DOI: 10.1080/02701960.2016.1259161

[30] Gao X, Hua Z. Experiencing Chinese education: Learning of language and culture by international students in Chinese universities. Language, Culture and Curriculum. 2021;**34**(4):353-359. DOI: 10.1080/07908318.2020.1871002

[31] Hapsari Y. English and international students' adjustment in Indonesian higher education: A teacher's perspective. JEES (Journal of English Educators Society). 2021;**6**(2):178-183. DOI: 10.21070/jees.v6i2.1133

[32] Ayling P. International education and the pursuit of 'Western' capitals: Middle-class Nigerian fathers' strategies of class reproduction. British Journal of Sociology of Education. 2021;**42**(4):460-474. DOI: 10.1080/01425692.2021.1886906

[33] Burton GE. Achieving synergy from synergogy: Superior student learning in the international business class. Journal of Teaching in International Business. 1992;**3**(2):29-40. DOI: 10.1300/J066v03n0203

[34] Spraakman G, O'Grady W, Askarany D, Akroyd C. Employers' perceptions of information technology competency requirements for management accounting graduates. Accounting Education. 2015:**24**(5):403-422. DOI: 10.1080/09639284.2015.1089177

[35] Sandel M. Learning in and from the west: International students and international women's organisations in the interwar period. History of Education. 2015;**44**(1):5-24. DOI: 10.1080/0046760X.2014.953605

[36] Ryan J. Teaching and learning for international students: Towards a transcultural approach. Teachers and Teaching. 2011;**17**(6):631-648. DOI: 10.1080/13540602.2011.625138

[37] Roberts P, Dunworth K. Staff and student perceptions of support services for international students in higher education: A case study. Journal of Higher Education Policy and Management. 2012:**34**(5):517-528. DOI: 10.1080/1360080X.2012.716000

[38] Bache I, Hayton R. Inquiry-based learning and the international student. Teaching in Higher Education. 2012;**17**(4):411-423. DOI: 10.1080/13562517.2011.640998

[39] Engkizar E, Muliati I, Rahman R, Alfurqan A. The importance of integrating ICT into Islamic study teaching and learning process. Khalifa: Journal of Islamic. Education. 2018;**1**(2):148-168. DOI: 10.24036/kjie.v1i2.11

[40] Putra AE, Rukun K, Irfan D, Engkizar E, Wirdati W, Munawir K, et al. Designing and developing artificial intelligence applications troubleshooting computers as learning aids. Asian Social Science and Humanities Research Journal (ASHREJ). 2020;**2**(1):38-44. DOI: 10.37698/ashrej.v2i1.22

[41] Kim HY. International graduate students' difficulties: Graduate classes as a community of practices. Teaching in Higher Education. 2011;**16**(3):281-292. DOI: 10.1080/13562517.2010.524922

[42] Idris A, Ion G, Seery A. Peer learning in international higher education: The experience of international students in an Irish university. Irish Educational Studies. 2019;**38**(1):1-24. DOI: 10.1080/03323315.2018.1489299

[43] Hughes H. International students using online information resources to

learn: Complex experience and learning needs. Journal of Further and Higher Education. 2013;**37**(1):126-146. DOI: 10.1080/0309877X.2011.644778

[44] Sukoco BM, Mudzakkir MF, Ubaidi A, et al. Stakeholder pressure to obtain world-class status among Indonesian universities. Higher Education. 2021;**82**:561-581. DOI: 10.1007/s10734-020-00667-3

[45] Rahayu D. Interaction in collaborative writing between international and domestic students in an Indonesian university. Studies in English Language and Education. 2020;**7**(1):113-128. DOI: 10.24815/siele.v7i1.15773

[46] Ferdiansyah S, Angin R. Thai students' experiences of online learning at Indonesian universities in the time of the COVID-19 pandemic/Pengalaman Mahasiswa Thailand dalam Pembelajaran daring di Universitas di Indonesia pada Masa Pandemi COVID-19. Journal of International Students. 2020;**10**(S3):58-75

[47] Mardiana PD, Sabiruddin S, Gustia AY, Yenis M, Langputeh S. Forms of using the internet to support student activities in online classroom learning in higher education. International Journal of Islamic Studies Higher Education. 2022;**1**(1):14-29. DOI: 10.24036/insight.v1i1.90

Chapter 15

Perspective Chapter: African Higher Education Centers of Excellence – A Critical Reflection

Bekele Workie Ayele

Abstract

There are different types of CoEs based on regional, national, and institutional needs, across different disciplines—health sciences, research, leadership, medicine, higher education, etc. Arguably, the conceptualizations of CoEs have been evolving as time goes by. It is imperative to critically examine the nuances of the challenges and opportunities of the African CoEs to enhance their capacity and potential to achieve their vision and mission. Therefore, the paper has twofold objectives: (1) What has been the strategic significances of the African CoEs? and (2) What are the perils of the African CoEs? These critical questions are examined from the perspective of Transformative Learning Theory. Although the strategic significances of the African CoEs included capacity development and academic collaborations and partnership, there have been also such perils as a lack of epistemic congruence within the African indigenous knowledge and skills bases and the compromisation of autonomy and academic freedom of the hosting HEIs of the CoEs.

Keywords: Africa, higher education, center of excellence, interdisciplinarity, transformative learning

1. Introduction

Historically, centers of excellence (CoE) originated in the manufacturing sector and were a centralized body to improve operations and output [1]. Later, they were leveraged by information and technology leaders, seeking to facilitate the creation of hubs for knowledge sharing and capacity building [1]. Currently, there are different types of CoEs based on regional, national, and institutional needs, across different disciplines—health sciences, research, leadership, medicine, higher education, etc. Arguably, the conceptualizations of CoEs have been evolving as time goes by.

CoEs could be a network of partners, with a coordinating center, which works together to pursue excellence in a particular area [2]. They could be physical and/or virtual. As partners, they could share infrastructure and bring together academics across different disciplines. The two common pillars of CoEs, therefore, are a concentration of resources, both material and human, in the pursuit of attaining and sustaining world-class performance in their focus areas [3]. The human capital of such

centers is unique, as they do have leading-edge knowledge and competency. Hence, CoEs are normally referred to as competency or capability centers.

Globally, interest in excellence has grown exponentially, as public and private institutions shift their attention from meeting targets to achieving excellence. The establishment of African CoEs has emerged as a trend in the African higher education space, spearheaded by different regional and global actors. The Word Bank (WB) and the African Research Universities Alliance (ARUA) are cases in point. The WB popularly introduced African CoEs in 2014. Presently, the WB has 76 CoEs, in 20 different African countries in the eastern and southern regions. These CoEs are run in collaboration with the governments of the hosting countries. WB's CoEs have been envisioned to strengthen selected Eastern and Southern African higher education institutions (HEIs) to deliver quality postgraduate education and build collaborative research capacity in the regional priority areas [4]. ARUA and United Kingdom Research and Innovation (UKRI), furthermore, have joined-forces and launched 13 African CoEs envisioned to address Sustainable Development Goals (SGDs).

Arguably, the ARUA's and the WB's centers of excellence appear focusing to alleviate the pressing challenges the continent is facing in the twenty-first century.

2. Objectives

CoE is typically established to address skills and knowledge deficits within organizations, countries, regions, and the continent at large. The African CoEs are no exception. However, there may be reasons to adopt a critical view on the presumptuous benefits of African CoEs. This is imperative to enhance their capacity and potential to achieve their vision and mission by critically examining the nuances of the challenges and opportunities of the African CoEs.

The overarching objective of this reflective paper, therefore, is to unpack the African higher education CoEs within the sociocultural and politico-economic premises of the African continent. Specifically, the paper has twofold objectives: (1) What have been the strategic significances of the African CoEs? and (2) What are the perils of the African CoEs? These critical questions are examined from the perspective of Transformative Learning Theory.

3. Methodology

The paper primarily used a critical desk review. Hence, scoping reviews of global evidence about CoEs were made using the Google search engine and data were gathered from such sources as PubMed, Scopus, CINAHL, and Google Scholar until November 2022. Once retrieved, they were critically reviewed and reflected on, following the objectives of the paper, in the backdrop of the sociocultural and politico-economic of the African continent, guided by Transformative Learning Theory.

4. Transformative learning theory

Worldviews/ frames of references are basic beliefs a person holds about how the world works [5]. They are often acquired uncritically through the socialization and acculturation process, most frequently during significant experiences with teachers,

parents, and mentors. Over time, in conjunction with numerous congruent experiences, they become more ingrained in our psyche and support us by providing explanations of the happenings in our daily lives and we become dependent upon them. They act as a sieve through which each new experience is interpreted and given meaning. The new experience is assimilated into these structures if it reinforces the meaning perspective. An incongruent new experience cannot be assimilated. They could be either rejected or the meaning perspective itself is revised and transformed to accommodate the new experience. In nutshell, the revision and transformation of meaning perspectives is the central point of Transformative Learning Theory.

Transformative learning is a desirable process for individuals to learn to think for themselves, through true emancipation from unquestioning acceptance of life experiences, without the active engagement of how we know what we know [6]. Transformative learning occurs when adults engage in activities that allow them to see a different worldview from their own [7]. A perspective transformation leads to "a more fully developed frame of reference which is inclusive, differentiating, permeable, and critically reflective" [6]. Transformative learning is threatening as we experience anxiety and feel threatened when we interrogate assumptions that have been taken for granted for a long in our lives [5].

There are two types of meaning perspective transformations: epochal transformations and incremental transformations [7]. Epochal transformation occurs when meaning perspective change comes quickly. The change is immediately obvious to the learner involved, over perhaps minutes or days. It is a conscious experience of a transformation from one state of not knowing to another state of knowing. A common example would be when someone feels a sense of "Ah Ha!" An incremental transformation, however, is a result of small shifts in meaning schema over time, perhaps over months or years. In this transformation, a learner slowly realizes that his/her meaning perspective has shifted. As a result, there is a kind of retrospective remembering of perspective shift. For instance, remembering the fact that one had a belief that she/he could never finish a university degree successfully. Epochal and incremental transformations assume that there is a conscious appreciation of a shift in meaning perspective in order to be considered transformative.

Furthermore, it describes the transformation of meaning perspectives that occur either in instrumental domain or communicative domain of learning [7]. The former involves cause-effect relationships, problem-solving, and an understanding of how things work. This includes an understanding of the environment (including people), engineering, adult learning and training, trades, management skills, and other technical areas. Transformation in the communicative domain involves the understanding of how people present themselves, and communicate and relate with each other [7] Generally, the communicative domain includes understanding, describing, explaining and reasoning intentions, values, ideals, moral issues, political, philosophical, psychological, and educational concepts and feelings [7]. In the communicative domain, meaning is created through abductive reasoning, which Mezirow describes as the process of using our own experience to understand another's [7].

4.1 Implication of transformative learning theory to African CoEs

The African CoEs are avenues, where different people with higher expertise and experiences converge, for critical academic debates. Hence, they are supposed to be centers where meaning perspective transformation takes place as they are the melting pots of different worldviews. Individuals involved in the African CoEs are supposed

to transform their perspectives, either by revising their worldview or transforming it. Ultimately, individuals could develop worldviews that are inclusive, differentiating, permeable, critically reflective, and integrative of experience [6]. Trafnsformative learning through the CoEs should be done by interrogating all dimensions of the African CoEs. This is a true emancipation for the African people and the continent of Africa. Therefore, we need to engage with African CoEs critically exploring critical topics, overcoming constraints, and expanding the limits of the art of the possible transformative journey. Nevertheless, this should be done within the backdrop of Millennia's old African indigenous knowledge and skill bases.

5. Strategic significances of the African CoEs

In this reflective paper, the specifics of the general strategic objectives/orientations of African CoEs are considered as significances/opportunities. The African higher CoEs could and should realize human resource development, and improve organizational agility to ultimately positively impact the development of scientific capacity for the creation of new knowledge and innovation to steer socioeconomic development of the continent.

5.1 Capacity development

There has not been a single and simple definition of capacity building. Over the years, however, it has been equated with UNESCO's conceptualization. Capacity is the [the] ability of individuals, organizations, and systems to perform appropriate functions efficiently, effectively, and sustainably [7, 8]. The International Institute for Educational Planning (IIEP) [8] divides the capacity building into two: (1) human resource development—providing skills, knowledge, and values to perform effectively, and (2) organizational development—the development of institutional legal frameworks to create and maintain institutional arrangements in a view to enhance the capacities of institutions [9]. In short, capacity includes not only the scientific production capacity of academics but also institutional conditions and capacities, supporting and facilitating these scientific productions.

"Excellence," was not designated with the habit to do the process rather than the end product [10]. The common characteristics of the CoEs are high research quality and productivity, resource attraction and concentration, international visibility and attractiveness, and organizational robustness and good governance [10]. They are often highly attractive to research and development (R&D) investments and talent in their field [11]. In general, CoEs are believed to bring innovative mechanisms to promote knowledge and scientific advancements [11]. The African CoEs, therefore, are believed to be epicenters for capacity development, which is an important requisite to steer the R&D, of the African country in question. Untimely, this could have a ripple effect as they could be easily emulated by other HEIs.

The human capital in the CoEs possesses very specific and unique skillsets, deep and broad experiences, and does have exudes multidisciplinary capacities. The African CoEs, therefore, are avenues for creating synergic capacities to act on new research problems, expanding the horizon of science. The African CoEs can add value to transform institutions and countries' economic growth and development. Arguably, the African CoEs have been envisioned to impact socioeconomic development of the African continent positively by supporting and doing scientific prioritization in the science system of the African countries. In other words, African CoEs are

believed to be the hub for the development of capacities, for enhancing R&D endeavors, so that commercialization of innovations; development of new technologies; and the improvement of services are possible and could be accelerated.

Therefore, the African CoEs need to be in tune with established practices and embrace the latest trends and emerging thoughts of higher education. Therefore, CoEs need to develop and document templates, blueprints, and repeatable processes and methodologies for all significant work efforts. As a matter of fact, the fundamental principle of the CoE is continuous success and evolution. CoE should establish, define and develop standards and best practices and improve them continually. They strive to surpass ordinary standards and standardize best practices for institution-wide adoption and offer advice on strategic planning, decision-making, and execution.

The African CoEs could permit resource pooling, human resource, in particular, to address critical skills, and applied research needs, which are highly needed across African countries. That is why the WB's African CoEs have been aiming at. These centers are expected to equip young Africans with new scientific and technical skills, in the areas, where the continent faces a serious shortage of skilled workers in fast-growing sectors, such as science, technology, engineering, mathematics (STEM), extractive industries, agriculture, health, energy, water, infrastructure, environment, agriculture, applied social science, education, and health [4].

Moreover, the ARUA's CoEs have been in a similar lane as the WB's. They are believed to be focal points for aggregating world-class researchers from member universities to undertake collaborative research across priority themes—extreme poverty and disease, fragile states and displacement, gender inequalities, and food insecurity. They are also supposed to provide opportunities for graduates from Africa and beyond to work with experienced researchers, forming an assembly point for skilled researchers and students seeking to carry out cutting-edge research.

5.2 Academic collaborations and partnership

CoEs should work with a partnership, which is a leveraging asset. The partnership might include collaboration in the delivery of education programs; faculty development programs; joint conferences, joint research, sharing access to specialized research; learning equipment and library resources (giving students and faculty exposure to different learning environment and equipment), student and faculty exchange, and joint organization of specific courses, for example, at the postgraduate level.

They (CoEs) have been drawing the attention of scientists to enhance collaborations and cultivate access to resources essential for advanced research [12]. Academic partnerships are the lifeblood of CoEs and make them a nodal point that connects various multidisciplinary perspectives the world over. The defining characteristics enable the African CoEs to disseminate discoveries and innovations to the whole of the continent, indeed, beyond.

CoEs have the ability to revitalize the academic system by providing platforms for interdisciplinary, university-industry, and triple-helix relations, promoting bottom-up priority setting among scholars and universities, and attracting talent [13]. Arguably, raising the African CoEs' teaching, engagement, and research capacity through a partnership with national and international leading institutions within a similar mission could help to build upon the strengths of the partnering institutions. The sharing of unique physical and human resources is vital to create synergies, thereby raise the quality of the impact of the CoEs. African CoEs should continue to

revise and update the academic partnership, including consideration of new partners and pushing the frontiers of their mission.

Therefore, the partnership of the African CoEs should be established with national and/or regional industries. CoE-Industry partnerships are important in making the African CoEs relevant by providing improved skills and knowledge, which could address the developmental challenges facing the continent. Extra-mural collaborations play an even greater role in [research] excellence than has been assumed previously [14]. Successful CoEs draw on larger collaborative networks, provide a link between disjointed peers and stakeholders, and work under conditions that reflect multi and transdisciplinary contacts. A scientific sector that operates at the intersection of a diversity of research groups may generate more original research by having a greater variety of perspectives [14]. However, all of the members of the CoE should be self-starters, who are interested in continuous learning and improvement of their skills and expertise.

The African CoEs also benefit from this linkage because university students and academics in them could be exposed to industrial problems, which could be a source for their applied research problem. In other words, this interlinkage could help CoEs to generate funding through fellowships and grants. In general, the partnership between CoEs and industry is a driver for the growth of the science-based industry and industry-based science.

Moreover, CoE-industry relationship could contribute to the understating and advancement of industrial new technologies, which aids the industry in improving the efficiency of these technologies during usage [15]. The pharmaceutical industries in the United States, for instance, have admitted that over 25% of their new drugs could not have been developed without academic research centers [16]. African CoEs could establish [15] important research partnerships with international institutions, critically examining evidence for policy making, hence creating capacity to train future generations of researchers, and stimulating the national science and innovation systems.

To stimulate and enhance the national science and innovation systems of African countries, the African CoEs need to embrace an interdisciplinarity perspective in their planning and actions. Interdisciplinarity basically refers to the broader units of inquiry, the intellectual units that structure the framework in which day-to-day decisions, actions, and interpretations are carried out by groups of scientists' [17]. Therefore, interdisciplinarity should not be described as a particular type of knowledge, but rather in terms of a form of cooperation between areas of knowledge or specialisms in science. One way of describing such cooperation is through the notions of interaction and integration [17].

Interdisciplinary capacity is imperative to look at complex problems critically from multiple perspectives and give solutions in an innovative way. Innovative solutions to problem are very rarely the function of a solo endeavor. Therefore, working in a disciplinary way is against the purpose and nature of CoEs. The essence of a discipline is that of a unified, autonomous corpus of knowledge, and an area of expertise. Students will be "disciplined" in this area through instruction and research of the profession [18].

Therefore, the African CoEs are expected to connect researchers, improving cooperation between and among researchers across disciplines and geographical areas. They are critically significant to impact and stimulate the national science systems of African countries. The African CoEs are expected to create "frontiers in different fields of science" and "internationally competitive (world-class) research capabilities."

6. Perils of African CoEs

The African CoEs do have potentials, as intended, to transform the African sociocultural and politico-economic consequences. However, in science there has been opportunities within challenges and *vice versa*— there have always been perils within potentials. Therefore, this section presents the perils of the African CoEs. This is important to fully harvest the fruits of these centers.

6.1 Autonomy and academic freedom

The African CoEs could and should combine issues of quality and relevance of education and research within the backdrop of the culture of African HEIs, in particular, and the continent, in general. Therefore, the African CoEs should uphold, present, and satisfies some unique conditions for long-term viability.

As indicated previously, the African CoEs are initiated by multinational organizations, which are based out of the continent. The quality indicators and monitoring and evaluation mechanism, therefore, are given to the African HEIs as part of the whole package of CoEs. Hence, they could violate and contradict with the established quality assurance systems of the specific countries and the continental large. The continent has been standardizing the African higher education guidelines for quality assurance.

Therefore, the African CoEs could face problems in getting much-needed support from individual academics at various levels as they could be perceived as affecting the academic freedom of individuals and the autonomy of institutions as they are imported. In other words, the role of autonomy and academic freedom, which are the lifeblood of the African CoEs are not espoused clearly and loudly. Excellence is among several organizational imperatives that risk creating a compliance culture at universities, where indicators are often imposed from the outside, thereby undermining autonomy [19].

CoEs can cater to university needs by diversifying their structures cognitively and institutionally into the postmodern university [20]. Ultimately, CoEs could fail to get the buy-in from the hosting HEIs for successful organization-wide adoption and cross-functional collaboration to leverage expertise, for the perceived lack of academic freedom. This is the very vision and mission of the establishment of the African CoEs. CoE could preferably be realized [20] via a sound governance structure that ensures autonomy and self-direction and broadly accepted commitment to academic values. Therefore, the African CoE as an influential brand to stimulate best practices serving as a new organizing principle for positive change in HEIs might not be working.

The African CoEs are established not as standalone centers, but as confirmed parts of a legal institution as a separate division in HEIs. Leadership is one of the critical components of a CoE. The CoEs require powerful and goal-oriented leadership to passionately lead a team in a given direction and drive toward success. The CoE leader should have the maximum commitment to achieving excellence, with the potential to influence the overall functions and long-term visions of the CoE. Arguably, the chance of the very presence of the CoE in the premises of HEIs, changing the ethos of these positively appears to be limited or rear. As a result, Ref. [19] recognizes the trade-offs are necessary to establish excellence milieus in academic settings and associated risks on the institutional level.

The aforementioned institutional governance characteristics of African CoEs are not attuned to the very nature of the leadership of African HEIs. The leadership of the hosting African HEIs is not visionary, vigilant, and agile. In most cases, the Vice

Chancellors and Presidents, with the exception of a few have been appointed because of their political affiliations with the ruling party in the disguised/ in the name of competition and election. Leaders are not, in most cases, appointed because of their merits. Vice Chancellors and Presidents have a widely acknowledged limited capacity for fundraising and even worse misappropriation of grants, procurement and monitoring processes, and hiring or training procedures of existing personnel. Even, trying to change these malaises through imposition might not be helpful to bring the desired/anticipated change.

Therefore, the asymmetric ways of appointment of leaders and leadership characteristics could cast more shadow on the perusal of the mission on part of the African CoEs.

The establishment of CoE needs critical research infrastructure, the existence of specific relationships, availability of funding, high research quality and productivity, resource attraction and concentration, international visibility and attractiveness, and organizational robustness [14]. African CoEs, therefore, is equated to "being better," which could mean, excellence in research, top-quality professors, favorable working conditions, sustainable financing mechanisms, job security and good salary and benefits, adequate facilities, adequate funding, academic freedom, public-private partnerships or generation of revenues through consultancy, training or research services, and atmosphere of intellectual excitement, and faculty self-governance [21]. The CoE emphasizes the ability to attract academic "stars" and mainly collegial consultation over resource allocation [21].

The abovementioned, can create divisions within existing academic environments in terms of resource distribution. In other words, the CoEs are characterized by the concentration of resources. The resource concentration might not be compatible with the limited resource provisions of other units within the institution in question. The resources allocation to the CoEs might not be "democratic" and equitable and may be socially as well as cognitively unacceptable to move scarce resources to a very few high performers in the research system [11]. Besides, there could be also a risk that the multifaceted functions of the university suffer, as excellence may push out relevance and societal engagement.

6.2 Epistemic congruence *vis*-a-*vis* violence

CoEs are significant to build institutional research capacity, which in turn has an effect in terms of results, hypotheses, and novel instrumentation. As such, how to construct research problems, which types of projects to pursue, how to divide research labor in terms of these problems, etc. are also among the effects of the CoE. All these are aggregated as an invention of new research methods and knowledge. CoEs are important for "epistemic venturing," pursuing risky projects that generate and test new hypotheses and attempts to develop new theories [11]. In a nutshell, epistemic effects, such as discovery processes, are the effects of the CoE. Hence, one of the core missions of African CoEs have been relevant knowledge production and effective and efficient mechanic dissemination of it (knowledge).

Through participatory methods, research design and interpretation of data and knowledge production can become Afro-sensed [22]. The process of Afro-sensing in research does not exclude scientific epistemology but seeks to blend ways of knowing and disseminating knowledge [22]. Therefore, the African CoEs should be avenues, where diverse epistemic and knowledge production takes place, including non-Western knowledge and ways of knowing.

Therefore, the African CoEs should be considered as the decolonizing instrument of African HEIs. Not only do they require responding the Eurocentric ideologies and

knowledge production, but also balance the tension between European epistemic traditions and African knowledge systems [23]. The African CoEs are poised to respond to the call for transformation related to higher education in many ways, including the promotion of African indigenous knowledge. This could be a challenge as the African HEIs, starting from the political dependence of the continent, have not only been expanding without epistemic independence.

The Africa CoEs need to be defined not only primarily in relation to excellence predicate, but also in terms of the broader sociocultural imperatives inside and outside of science proper. Africa CoEs should position themselves in the African continent to become relevant to the socioeconomic transformation of Africa and Africans. Therefore, Africa CoEs needed to revitalize indigenous knowledge systems. Therefore, the promotion and incorporation of indigenous knowledge into the development ACoEs projects through explicit procedures involving traditional practitioners are of high significance.

However, there appears to be a problem as far as epistemic justice is concerned within the African CoEs. The African HEIs themselves, needless to mention the African CoEs, have been influenced by colonial or western ideologies and dominated by Anglo-Saxon academic tradition. Creating epistemic congruence and coherence between the African CoEs and African societies is a difficult one, lingering and even compounding the epistemic violence of the African CoEs.

7. Conclusions

The African CoEs do have significant scientific, political, economic, and social impacts. However, these impacts appear reduced because of the lack or absence of CoEs' quality assurance and enhancement mechanism within the framework of the African context.

Hence, a comprehensive framework of external and internal evaluation is to guide and inspire Africa CoEs, and to help governments and funding agencies shape and oversee them.

There have never been established criteria for the African CoEs within the context of the continent to do baselines assessment and plan continuous improvements. Therefore, clearly demonstrating success is a sticking point.

The attempt of setting common milestones applicable to all CoEs across the globe might be misleading. Although it is of paramount significance to have global indicators, it is still important to put local parameters to the ACoEs, which make them relevant to the continent.

The lack of vibrate leadership on the part of the HEIs hosting the African CoEs appears negatively, affecting the spillover effect of the CoEs on the general function and arrangement of the hosting institutions.

The African CoEs need to promote a global view, aiming at enhancing healthy competition on a global platform and promoting the development of globalized knowledge, while at the same time promoting the African indigenous knowledge and skill bases.

Author details

Bekele Workie Ayele
Kotebe University of Education, Addis Ababa, Ethiopia

*Address all correspondence to: bekeleworkie@gmail.com

IntechOpen

References

[1] Patel J, Andrews LS. Key steps to establishing a center of EXCELLENCE-If you're struggling to optimize your return on investment from enterprise content management and other strategies, this just might offer a solution. Infonomics. 2010:40

[2] Hellström T, Jabrane L, Brattström E. Center of excellence funding: Connecting organizational capacities and epistemic effects. Research Evaluation. April 2018;**27**(2):73-81

[3] Santos-Moreno P, Caballero-Uribe CV, Massardo ML, et al. Systematic and progressive implementation of the centers of excellence for rheumatoid arthritis: A methodological proposal. Clinical Rheumatology. 2017;**36**:2855-2858

[4] World Bank. Eastern and Southern Africa Higher Education Centers of Excellence. Washington, D.C., USA: World Bank; 2021. Available from: https://projects.worldbank.org/en/projects-operations/project-detail/P151847

[5] Mezirow J. Learning to think like an adult: Core concepts of transformation theory. In: Mezirow J and Associates, editors. Learning as Transformation: Critical Perspectives on a Theory in Progress. San Francisco, CA: Jossey-Bass; 2000. pp. 3-33

[6] Mezirow J. Beyond friere and habermas confusion. A response to Bruce Pietrykowski. Adult Education Quarterly. 1996;**46**:237-239

[7] Bolger J. Capacity development: Why, what and how. In: Capacity Development/ Occasional Paper Series. Vol. 1, No. 1. Hull, Quebec: CIDA, Policy Branch; May 2000

[8] IIEP-UNESCO. 2014-11-20. Retrieved January 16, 2023

[9] Mehrotra A, Dimick JB. Ensuring excellence in centers of excellence programs. Annals of Surgery. 2015;**261**(2):237-239

[10] Langfeldt L et al. Excellence and growth dynamics: A comparative study of the matthew effect. Science and Public Policy. 2015;**42**(5):661-675

[11] Aksnes D et al. Centres of Excellence in the Nordic Countries. A Comparative Study of Research Excellence Policy and Excellence Centre Schemes in Denmark, Finland, Norway and Sweden. Working Paper 4/2012. Oslo: NIFU; 2012

[12] Ferguson GM, Froehlich JA. Establishing a center of excellence: The Total Joint Center at the Miriam Hospital. Rhode Island Medical Journal. 2013;**96**(3):16-18

[13] Borlaug SB. Moral hazard and adverse selection in research funding: Centres of excellence in Norway and Sweden. Science and Public Policy. 2016;**43**(3):352-362

[14] Fekadu A, Oppenheim C, Manyazewal T, et al. Understanding the key processes of excellence as a prerequisite to establishing academic centres of excellence in Africa. BMC Medical Education. 2021;**21**(1):36

[15] Fekadu A, Hailu A, Makonnen E, Belete A, Yimer G. Short-term impact of celebrating the international clinical trial day: Experience from Ethiopia. Trials. 2017;**18**(1):332

[16] Hellstrom T, Jabrane L, Erik Brattstrom E. Center of excellence funding: Connecting organizational capacities and epistemic effects.

Research Evaluation. 2017;**27**(2):73-81. DOI: 10.1093/reseval/rvx04

[17] Reichert J, Furlong G. Five key pillars of an analytics center of excellence, which are required to manage populations and transform organizations into the next era of health care. Nursing Administration Quarterly. 2014;**38**(2):159-165

[18] Grant LA, Gulsvig J, Call J. Measuring excellence: The new quality agenda. Provider. 2006;**32**(10):1-7

[19] VINN Excellence Center (Sweden) [Accessed: 2 January 2023]

[20] Centres of Excellence and Capacity Building: From Strategy to Impact Tomas Hellstro¨ m* Lund University School of Economics and Management, Lund University, Lund 221 00, Sweden *Corresponding author. Email: tomas.hellstrom@fek.lu.se

[21] Hollingsworth R, Hollingsworth EJ. Major discoveries in biomedical research organizations: Perspectives on interdisciplinarities, nurturing leadership, and integrated structures and cultures. In: Weingart P, Stehr N, editors. Practicing Interdisciplinarity. Toronto: University of Toronto Press; 2000. pp. 215-244

[22] Ndlovu-Gatsheni S. Decolonization, Development and Knowledge in Africa. Turning Over a New Leaf. Routledge; 29 April 2022

[23] Addis Ababa Science and Technology University (AASTU). The Artificial Intelligence & Robotics Center of Excellence. Addis Ababa, Ethiopia: AASTU; 2021. Available from: http://www.aastu.edu.et/research-andtechnology-transfer-vpresident/the-artificial-intelligence-roboticscenter-of-excellence/

Chapter 16

Perspective Chapter: Sustaining University Education for and National Development in Nigeria

Emmanuel Nnadozie, Afeikhena Jerome and Omo Aregbeyen

Abstract

This chapter presents a retrospective and prospective reflections on university education in Nigeria in relation to national development. Retrospectively, the Nigerian university system was among the best in Africa and beyond, especially in the 1970s. The universities were top notch and attracted other Africans who flooded into Nigeria to study. Then the Nigerian university system possessed the four crucial elements of a universal and functional university system-quality teachers, quality students, an enabling environment for learning and international competitiveness. However, over the past three decades, the Nigerian university system has suffered benign neglect and lost its hallmark of quality, and thereby raising concerns about its role and relevance in contemporary national development. Nevertheless, this chapter expresses strong believe and conviction that the university system is still relevant for the socio-economic and political development of the country but there is the need to take necessary actions/steps to strengthen the system towards making it have the desired and comparative international quality and functionality required to meet the requirements of contemporary challenges and the future. Suggestions were offered accordingly.

Keywords: university education, national development, university ranking and Nigerian university system, brain drain, education funding

1. Introduction

Attention and interest in the role of the university in national development is evergreen. This is because universities have long been and remain vital and powerful drivers of socio-economic, cultural and political development, and global innovation. Like other countries, universities have continued to multiply in Nigeria and are expected to contribute to her socio-economic, cultural and political development. However, given the historical evolution of university education in Nigeria, past glory and performances, vis-à-vis recent inclinations and experiences, there have been serious reservations about the role and relevance of Nigerian universities and other tertiary education institutions to the national development. Accordingly, the discussions in this paper convey some retrospective and prospective reflections on University Education in Nigeria in relation to National Development.

The chapter will be structured into 6 sections. The first is the introduction followed by Section 2 that highlights the role of universities in national development. Section 3 discusses the evolution of university education in Nigeria and its contributions to national development. The current state of the quality of university education in Nigeria is presented in Section 4. Section 5 briefly discusses the expected role(s) of university education in Nigeria going forward. Section 6 appraises the factors that undermine the quality of Nigerian universities while Section 7 concludes the chapter.

2. The role of the university in development

Historically, the first medieval university was at Salerno, Italy, in the 9th century, followed by the University of Paris in the second half of the 12th century and subsequently Oxford and Cambridge in the European continent. At the very beginning, universities exist as associations or guilds for learning particular crafts, and later became institutions for the creation and dispersion of knowledge. And as knowledge comes to replace other resources as the main driver of economic growth, and education increasingly become the foundation for individual prosperity and social mobility; the role of the universities became more pronounced and fundamental. Thus, universities became widely recognized and linked with research, information transfer, and technology development.

As universities pursue their missions of generation, dissemination, advancement and application of knowledge, they have become of significant importance in the service of the society at the local, regional and international levels. Universities are been looked up to for proper and adequate human capital development, the structural transformation of an economy, technological innovation, forging of democratic citizenship, social cohesion, nation building, and preserving the earth. Indeed, there is growing evidence that university education, through its roles in empowering domestic constituencies, building institutions, and nurturing favorable regulatory frameworks and governance structures, is vital to a country's efforts to increase social capital and to promote social mobility and cohesion, are proving to be an important determinant of economic growth and development.

From the forgoing and summarily, the main functions of universities in the development process at whatever level include to: (i) serve as repositories and generators of knowledge; (ii) prepare and equip graduates so that they can obtain viable employment; (iii) offer rational and timely criticisms in areas of public policy and social and economic life; (iv) serve as large and influential bodies in civil society and the state; and (v) produce graduates to foster cohesive and tolerant communities.

Specifically, Otonko [1], identified the benefits derivable from a good and functional university education system to include: (i) the rapid industrialization of the economy, by providing manpower with adequate professional, technical and managerial skills, (ii) boost the transformation of societies into knowledge societies, by providing not just educated workers, but knowledge workers who will contribute immensely to the growth of the economy, (iii) instill good attitudes and engenders attitudinal changes that are necessary for the socialization of the individuals, thereby, leading to the modernization and overall transformation of the society, (iv) help through teaching and concise research, in the creation, absorption, dissemination and application of knowledge, and (v) the formation of a strong nation- state and at the same time aids globalization, and (vi) allow people to enjoy an enhanced life of mind', offering the wider society both cultural and political benefit.

At the empirical level, Egorov et al. [2] study demonstrated that universities are fully-fledged economic agents which make positive contributions to gross regional product (GRP) growth in Russia. They, therefore, concluded that the development of regional higher education systems would lead to a positive effect on regional economic development. Goldstein et al. [3] enumerated eight sources of the impact of HEI on GRP, namely, knowledge creation, human capital creation, the transfer of know-how, technological innovation, capital investment, regional leadership, influence on environment, and knowledge infrastructure production.

3. University education and national development in Nigeria

The advent of university education in Nigeria is traced to the Elliot Commission of 1943, which culminated in the establishment of the University College Ibadan (UCI) in 1948. The UCI was an affiliate of the University of London. By the late 1950s, it became apparent that Nigeria would need more universities to cater to the many secondary school graduates. In April 1959, the Ashby Commission (The Commission on Post-School Certificate and Higher Education) completed a comprehensive research on the state of education in Nigeria. Several recommendations were provided by the Ashby Commission including the establishment of more universities. The University of Nigeria, Nsukka was later established in October 1960, a few days after Nigeria gained its independence, making it the first autonomous and full-fledged university in Nigeria.

Several universities followed suit. Ahmadu Bello University was established in 1962. In the same year, two more universities were established in Nigeria – the University of Ife, Ife-Ife (now Obafemi Awolowo University) and the University of Lagos, Lagos. These five universities are collectively referred to as the first-generation universities. Following recommendations from Nigeria's Third Development Plan, seven more universities were founded in 1975. These are the universities of Port Harcourt; Ilorin; Kano; Calabar; Jos; Maiduguri and Sokoto.

From 1979, State governments started establishing State Universities. In 1999, the law prohibiting non-federal and state entities from establishing universities was abolished, paving way for the creation of private owned universities. The first private universities to receive licenses are Babcock, Madonna and Igbinedion Universities in 1999. Currently, there are 170 universities in Nigeria (See **Table 1**) comprising 49 Federal Universities, 59 State Universities and 111 private Universities.

Universities in Nigeria were expected to be key contributors to the human resource needs of the countries. Initially, there was a particular focus on the development of human resources for the civil service and the public professions. This was to address the acute shortages in these areas that were the result of the gross underdevelopment of universities under colonialism, and the departure of colonial administrators and professionals following independence. The major purpose for establishing universities in these countries was, and still is, for the institutions to play a pioneering role in addressing problems of poverty, social disorganization, low production, unemployment, hunger, illiteracy, diseases, that is, the problems of underdevelopment, which appeared to be common on the African continent.

Otonko [1] provided a good summary and specifics of how university education in Nigeria has contributed to national development. According to him, they have and still providing not only the high-level skills necessary for every labor market but also the training essential for teachers, doctors, nurses, civil servants, engineers, humanists, entrepreneurs, scientists, social scientists, and a myriad of other personnel.

Years	Federal	Region/ State	Private	Total (Per Row)	Remarks
1948–1960	1	1*	—	2	
1961–1974	1	3*	—	4*	
1975–1998	23	10	—	34	Four existing Regional/State Universities by 1974 were taken over by the Federal Government in 1975.
1999–2009	2	22	40	64	The first three (3) private universities were licensed in 1999 and fifteen were licensed in 2005; one in 2006; ten in 2007, and seven in 2009.
2010–2019	17	15	39	70	
2020–2022	2	12	32	46	
TOTAL	(45) 49	(63) 59	111	(220) 219	

Four Regional/State Universities in existence by 1974 which the Federal Government took over in 1975 should be subtracted from the vertical Region/State and Total columns. Source: Author (based on information available on the website of National Universities Commission). The list is the current and valid one for the year 2022 (updated with NUC on 30/10/2022).

Table 1.
Distribution of the 170 Nigerian universities by ownership as at October 2022.

These trained individuals are engaged in developing the capacity and analytical skills that drive local economies, support civil society, teach children, lead effective governments, and make important decisions which affect the entire country. In addition, and notably too, the university education in Nigeria has led to the development of many Nigerians into sound and effective citizens through higher self-awareness and self-realization of individuals at various tasks, enhanced better human relationships, national consciousness and effective citizenship. The universities in Nigeria have also by and large enhanced social, cultural, economic, political, scientific and technological progress in Nigeria. The country is more blessed now with specialists at various fields of endeavor: medicine, law, engineering, philosophy, education, etc. and thereby making the nation become more and more dynamic and self-reliant as the days go by. University education has also been on the vanguard of creating opportunities for the teeming Nigerian population towards building the desired united and egalitarian country that encourages every Nigerian to contribute to the development or upliftment of the country. The university education has continually churned out scholars who have contributed meaningfully to the world‘s reservoir of knowledge.

However, it has been observed that university education in Nigeria has performed very poorly in terms of focus on innovative works and entrepreneurship as well as the commercialization of research findings. This is because they have continued to focus only on their traditional role of training scholars and leaders, but remained weak in the practical application of knowledge and are unable to respond to the demands of the job market. In addition, there is the growing worry on the fallen and falling standards of university education in Nigeria.

4. Current state of the quality of university education in Nigeria

Universally, the quality of university education is often assessed via a set of four (4) connected indicators. These are "*quality teachers", "quality students", "an enabling environment for learning"; and 'international competitiveness'*. Good quality university education features world class teachers and researchers who invest in one another through stimulating lectures, seminars, workshops, conferences, and other academic activities. Historical recollections indicated that Nigerian premier universities started out this way[1], but today though with exceptions here and there, most Nigerian universities (including the old ones) suffer from poor quality teaching at the instance of low quality of lecturers and substandard research outputs. Indeed, Nigerian universities are noted to relatively under perform on research in the continent. Nigeria's universities produce only 44% of the scholarly output of South Africa and 32% of Egypt. This is despite that Nigeria has nearly four times more universities than Egypt and over six times more than South Africa. On the whole, universities in Nigeria lag well behind equivalent global economies like South Africa, Egypt, Thailand, Turkey and Brazil. They also lag behind traditional world leaders. This, therefore, makes the general national outlook very discouraging and disheartening.

While efforts at improving on the quality of the students that are fed into the university at the instance the declining quality in elementary and secondary schools are recognized, however, there are still significant lapses. Many universities, particularly, privately owned ones admit students on very low scores (120 out of 400 marks, 30 per cent pass mark) in the Joint Admissions and Matriculation Board (JAMB) qualifying examination. This constitute a significant problem. Moreover, Nigerian universities loses local talents and fails to replace them. According to data of UNESCO Institute of Statistics (UIS), Nigeria is the number one country of origin for international students from Africa, as she sends the most students overseas of any country on the African continent, and outbound mobility numbers are growing at a rapid pace. **Figure 1** shows that the number of Nigeria students abroad increased by 164 per cent in the decade between 2005 and 2015 alone from 26, 997 to 71,351. **Figure 2** shows the trend for the three (3) major choice destinations from 2014/15–2020/21. Both figures show significant number of outbound students'

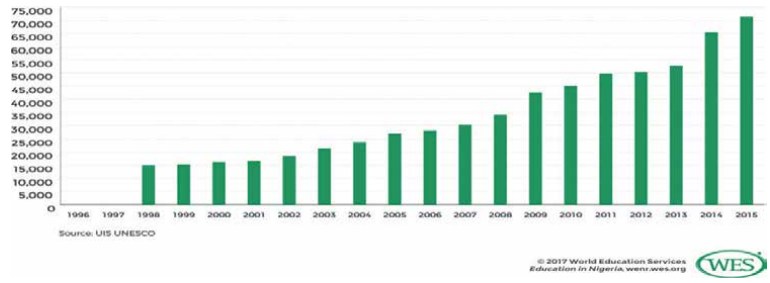

Figure 1.
Number of outbound Nigerian students between 2005 and 2015. Sources: IRCC (CA), IIE/open doors (US), HESA (UK).

[1] It is documented in Ojudu [4] that by 1980 University of Ibadan and Ahmadu Bello University earned global recognition for research in tropical health and agriculture, respectively.

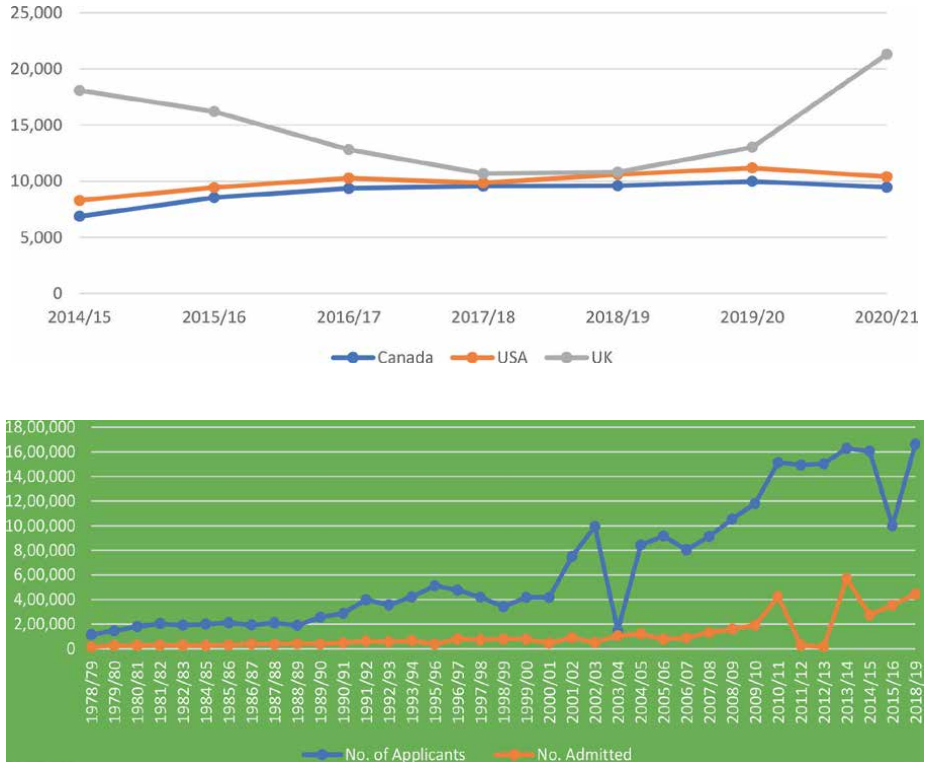

Figure 2.
Applications and admissions into Nigerian universities, 1978–2019. Source: National Bureau of statistics (NBS) and the joint admissions and matriculation board (JAMB).

overtime. In contrast, the system fails to attract the equivalent in foreign students as foreign students are few in Nigerian Universities. So, there has been "brain drain" rather than "brain exchange".

The environment for learning is becoming more and more un-enabling. Even though universities are mushrooming all over the place, but most of them are lame right from birth, while older ones are wallowing in crumbled and still crumbling basic infrastructure and facilities. Indeed, most universities are ill-equipped. A survey by the National Universities Commission (NUC) records that only about 30 per cent of Nigeria student population have adequate access to classrooms, lecturer theaters, laboratories, workshops and libraries. According to the University Systems Chronicler, over 70 per cent of the laboratory equipment and library books in today's Nigeria universities were bought and placed between 1960 and 1980. Other necessary amenities such as electricity, water, good hostel accommodation and medical care are also inadequate.

In international competitiveness, Nigerian universities rank very low in world university ranking (see **Table 2**). Only one Nigerian university, the University of Ibadan (UI), was listed among the first 1000 universities in the world by the Center for World University Ranking in 2018/ 2019. Even at this, the position UI occupies in the ranking says a lot about the discouraging state of university education inn Nigeria. More instructively, of the 14 African Universities that featured in the in the top 1000 of the Center for World University Ranking of 2018/2019, Nigeria performed poorly relative to South Africa and Egypt. Indeed, the first five leading universities in Africa

S/No.	World rank	University	Location	NR	QE	AE	QF	RO	QP	INF	CIT	Score
1	223	University of Cape Town	South Africa	1	216	294	187	293	299	190	254	77.9
2	230	University of the Witwatersrand	South Africa	2	133	80	216	367	377	187	304	77.7
3	402	University of KwaZulu-Natal	South Africa	3	509	277	—	400	526	347	327	74.9
4	438	University of Pretoria	South Africa	4	—	686	246	416	555	600	460	74.5
5	448	Stellenbosch University	South Africa	5	555	139	—	428	500	409	541	74.3
6	452	Cairo University	Egypt	1	569	> 1000	228	378	629	602	541	74.3
7	715	Ain Shams University	Egypt	2	—	> 1000	—	606	870	779	541	71.8
8	771	Makerere University	Uganda	1	448	> 1000	—	981	779	456	673	71.3
9	790	University of Johannesburg	South Africa	6	—	> 1000	—	785	896	781	541	71.2
10	884	Mansoura University	Egypt	3	—	> 1000	—	731	942	971	898	70.5
11	903	Alexandria University	Egypt	4	500	> 1000	—	768	923	> 1000	898	70.4
12	908	Tunis El Manar University	Tunisia	1	- >	1000	—	641	946	> 1000	> 1000	70.4
13	964	North-West University	South Africa	7	591	> 1000	—	823	> 1000	681	> 1000	70
14	991	University of Ibadan	Nigeria	1	540	> 1000	265	> 1000	> 1000	774	898	69.8

Source: cwur.org/2018-19.php
Breakdown: South African Universities = 7, Egyptian Universities = 4, Ugandan University = 1, Tunisian University = 1, Nigerian University = 1, Total = 14.
Key: NR = National Rank, QE = Quality of Education, AE = Alumni Employment, QF = Quality of Faculty, RO = Research Output, QP = Quality of Publications, INF = Influence, CIT = Citations.

Table 2.
The 14 African countries listed in top 1000 of the 2018/19 university ranking by Center for World University Ranking.

are in South Africa, followed by two others from Egypt. Summarily, of the 14 universities, South Africa had 7, Egypt 4, while Uganda, Tunisia and Nigeria had 1 university each. Retrospectively, Nigerian universities in the 70s were said to be among the best in Africa and the world. So beautiful and attractive were the institutions then that other Africans came to study in Nigeria. In those glorious days, Nigerian universities were proud producers of great graduates (**Table 2**).

5. Expected roles of university education in Nigeria

Undoubtedly, Nigeria given the vast potentials she possesses and the myriads of challenges faced (high and widespread poverty, high unemployment rate, significant infrastructural deficits, low technological development/slow technological adoption, poor governance and leadership across all strata of government layers, increasing internal conflicts, etc.) need university education system towards the achievement of development goals and the transformation to become an industrialized sufficiently high-income country providing high quality life for all its citizens.

To start with, the universities still have an essential role in conducting meaningful, particularly cutting-edge researches and trainings of highly qualified personnel. The Universities remain the active promoters of the innovation culture at the regional and international level. Higher education can enhance economic development through technological catch-up, by helping economies gain ground on more technologically advanced societies. Investing in tertiary in Nigeria will accelerate technological diffusion, which would decrease knowledge gaps and help reduce poverty in the country. The development of infrastructure is a vital component in steering the country's development agenda. Universities have a primary role in empowering Nigerians with expert knowledge to work on infrastructure in their own country.

More importantly, the universities remain critical and immense significance of serving as the intellectual citadel where political discourse occurs and ideologies pertinent to policy formulation are generated. It is necessary that dysfunctional systems of the past are replaced with new value systems that will repair the emaciated social fabric. Universities can assist in this by developing individuals committed to democratic values and human rights.

Hence, the imperative and continued need for sustaining university education for national development in the country.

6. Factors undermining the quality of Nigerian universities

The factors undermining quality in Nigeria universities are serious and disquieting. The declining quality and standard of university education in Nigeria is palpable. Nigerian universities have failed to deliver the expected and contemporary quality education due to a number of factors. The major factors include:

6.1 Inadequate funding

Generally, education is poorly funded in Nigeria. **Figure 3** shows the budgetary allocation to education as percentage of government total budget spanning about three decades from 1992 to 2019. It could be seen that the United Nations Educational,

Figure 3.
Budgetary allocation to education as % of Total budget in Nigeria, 1992–2022. Source: CBN statistical bulletin, various issues.

Scientific, and Cultural Organization (UNESCO) recommendation that between 15 and 20% of a nation's budget be allocated to the educational sector was seldom met.

The poor funding of education directly translates to poor funding of universities especially with the increase in their numbers over time. For instance, it is noted that the Federal Government of Nigeria's budget for 50 Federal Universities and UBE (Universal Basic Education) was N495, 456,130, 065 which translated to 40.88% of the budget allocation of California State University, USA for that year.

Thus, a major constraint to quality and attainment of academic excellence in Nigerian universities is financial constraints resulting in many academics and non-academics working under difficult circumstances. Indeed, many universities are unable to build lecture halls, students' hostels, provide decent and functional offices for teaching staff, equip laboratories and workshops and pay entitlements, allowances, and medical bills and provide research grants.

6.2 Inadequate and poor-quality teaching staff

Most universities in Nigeria are short of lecturers to adequately handle teaching and learning activities, due to inadequate funding to employ adequate number of lecturers. The student-lecturer ratio in the Nigerian university system is very high in contradiction to global practice of quality education. In most of the top 200 universities in the world, the staff-student ratios are amazingly low and good. Indeed, for the top universities in the world, the staff-student ratios are as follows: California Institute of Technology and University of Chicago, both in the USA have 6:9; University of Oxford has 11:6, while Harvard has 8:9 student-lecturer ratio. In contrast, many universities in Nigeria have student-lecturer ratios of 300:1 or more. Given this scenario, it is evident that the few available lecturers are seriously over worked. Owing to the shortage of lecturers, academic programmes in many universities are not accredited by the National Universities Commission. Bamiro [5] linked the observed and increasing problem of de-intellectualization of the academia to low quality of staff in some institutions of higher learning in Nigeria. He asserted that where there is inadequate teaching staff and poor quality of lecturers, the attainment of good quality in higher education will be difficult.

Most universities in Nigeria lack staff development programme for training and re-training of staff. However, in this era of knowledge explosion and emergent knowledge-based economy, staff development is of paramount importance. Vibrant staff development programmes on a continuous basis will help academics and non-academics to clarify and modify their behavior, attitude, value, skills and competencies [6].

6.3 Frequent labour disputes and closures of universities

A big challenge to quality university education in Nigeria is the incessant staff union disputes and subsequent closures of the institutions. Financial crises between the various staff unions and the government, students' excesses like riot, and other issues that lead to strike and temporary shut-down of universities. **Table 3** shows that labour disputes and closures of universities have characterized the system since 1980s. These closures have overtime resulted in disruption of academic activities, loss of time and academic sessions, unstable academic calendar, delayed implementation of development policies, drop in productivity, uncertainty on the terminal point of programmes, poor quality of graduates and brain-drain with the system (both of students and faculty).

6.4 Brain drain

Brain drain is a common problem in Nigerian universities dating back to the military era. It is estimated that Nigeria lost a total number of 10, 000 professionals from different higher institutions between 1986 and 1990 [7]. This is occurring much more frequently lately as universities lose talents in academia to other fields for economic or political reasons. Brilliant lecturers leave the frustrations of universities for more rewarding sectors or seek better opportunities outside the country.

Brain drain has distorted the organizational structures of some Nigerian universities. In most cases, brain drain has placed the academic departments of the Nigerian universities in a state of chaos and no direction. Many departments of Nigerian universities have lost the top-middle cadre of their lecturers to brain drain, while most of the junior lecturers were left behind. More instructively, many Nigerian scholars who traveled for their doctorate degree abroad were employed by their host universities, and chances that they will come back to fill the vacuum left in Nigeria is very minimal ([8], p. 2–4).

6.5 Poor governance and leadership

Despite the centrality of good governance to the success of universities, most Nigeria universities are facing a governance crisis that often manifests itself in terms of conflict between management and students and staff that flares up from time to time over issues such as living allowances, pay, terms and conditions of service, limited representation in university governing bodies and perception of university authority as defender of state interests as opposed to the interests of the university [9]. Existing evidence shows that the principles of good governance are routinely flouted with great frequency in many African countries and particularly, Nigeria [10–12], resulting in poor governance. In particular, regular political interference,

Year	ASUU	SSANU	Total	ASUU strike duration
1988	1	1	2	
1989	1	1	2	
1991	1	—	1	
1992	1	—	1	
1993	1	1	2	
1994	1	1	2	
1995	1	—	1	
1996	1	1	2	
1997	—	1	1	
1998	1	—	1	
1999	1	1	1	5 months
2000	—	1	1	
2001	2	1	3	1 week; 3 months
2002	1	—	1	2 weeks
2003/2004	2	—	1	1 week; 6 months
2005	1	—	1	3 days
2006	1	—	1	3 days
2007	1	—	1	3 months
2008	1	—	1	1 week
2009	1	—	1	4 months
2010	1	—	1	Over 5 months
2011/12	1	—	1	3 months
2013	1	—	1	Over 5 months
2015	1	—	1	Over 3 months
2017	1	1	2	Over 5 months
2018	1	1	2	3 months
2020	1	—	1	over 9 months (275 days)
2022	1	1	2	8 months (242 days)

Source: Authors Compilation.

Table 3.
Chronicle of Strikes ASUU and SSANU in Nigerian universities 1988–2018.

especially in public universities, makes adherence to the principles of good governance a near impossibility [10].

An ancillary challenge closely associated with the declining quality in the university system is the syndrome of *"sexual molestation" and/or "grades for gratification"* that has become very rampant. A recent British Broadcasting Corporation (BBC) investigative expositions and other news reportage confirmed this. Imperatively, this syndrome must be checkmated before it festers further. The ongoing efforts by the National Assembly to pass a Bill to officially criminalize these acts and make offenders serve deserving punishment is recognized and commendable.

6.6 Wrong advice and leadership weaknesses

In the two turbulent decades between the 1980s and 1990s, higher education in Nigeria faced a period of dramatic structural change and financial and governance crises. At the same time, the sector experienced uncoordinated expansion amid dilapidated infrastructure, deteriorating working conditions, low staff morale, worsening academic quality standards, staggering budget deficits, all compounded with phenomenal enrolment increases and the continuing ravaging impacts of the historic brain drain phenomenon.

The systematic neglect and rot of Nigerian universities intensified and acquired the status of official policy during 1980s and 1990s and up till date based entirely on the flawed presumption and external advice that university education in sub-Saharan Africa yielded no clear impacts on social equity, economic growth, or poverty reduction. Unfortunately, the leadership of these countries, particularly Nigeria took to this non-evidence based and ill-informed advice and drastically cut the budgetary allocation to university education. However, international institutions, and other major development organizations and industrialized countries have now recognized that higher education and knowledge production are critical for rapid economic development in every country.

6.7 Supply and demand imbalance

A major challenge is the demand imbalance principally as a result of the burgeoning population of the country which is now put at 201million going by the latest estimates of the World Bank, with over 60% under the age of 25 years. Given these dynamics, there has been increasing demand for university education which has not been met. **Figure 2** shows the trend in applications for admission into universities and the number admitted from 1978/79 session to 2018/19 session, with wider gaps in more recent years. Indeed, there is an everincreasing demand for placements but universities are constrained by institutional carrying capacity for placements of applicants. **Figure 4** shows the percentage of applicants that gets admitted yearly. Going by the figure, not up to 40% of the applicants get admitted in any 1 year except for the 2003/2004 academic session.

There is also the problem of access in addition to that of quality in the nation's university system. While the Open University and the Distance Learning initiatives

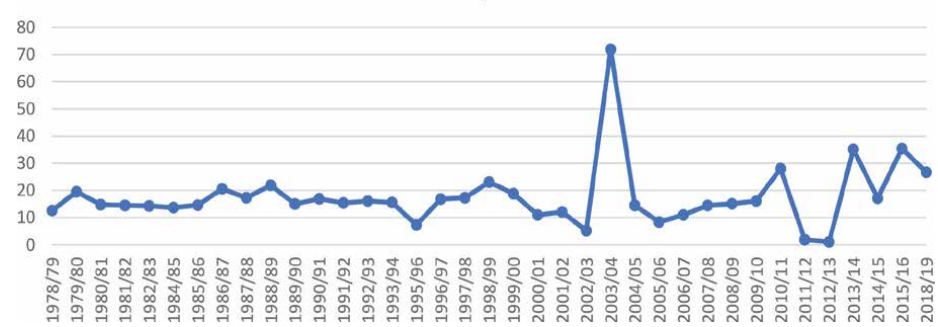

Figure 4.
Percentage of applicants that gets admitted into Nigerian universities, 1978–2019. National Bureau of statistics (NBS) and the joint admissions and matriculation board (JAMB).

are recognized and commendable, however, their quality are doubtful given that their operations and programmes delivery depend largely on the faculty members of full-time universities. There is, therefore, the need for more creativity with the university system on more effective ways to particularly increase access for the teeming prospective applicants for placement in the university.

7. Summary and conclusions

Retrospectively, Nigerian universities (in the 1970s) were said to be among the best in Africa and the world. So beautiful and attractive were these institutions then that other Africans came to study in Nigeria in those glorious days. They practiced the idea of universality of universities characterized by the embodiment of *"quality teachers", "quality students", "an enabling environment for learning"; and 'international competitiveness'*. All four factors combined to ensure that Nigeria had world-class universities then. However, over the past three decades, beginning in the 1980s, with fewer resources, inadequate capacity and a history of neglect among other challenges, quality was knocked off the system consequently raising serious questions about the contributions and relevance of Nigerian universities and other tertiary education institutions to national development. One of the main issues facing the university system is its research and innovation capacity and the ability to use these for the country's transformation.

Several of the factors undermining quality in Nigeria universities and some other subsisting challenges were identified and explained. The conclusion from the reflections contained in this paper is that the universities were once glorious and contributed to the development of the country, and are still relevant and needed for the socio-economic and political development of the country. In view of that, the paper posits that there is the need to strength them to have the desired and comparative international quality and functionality necessary to meeting the requirements and challenges of Nigeria's development agenda or the future. To remain strong, relevant and have maximum impact, universities must reorient their mandate and usefulness in the twenty-first century society.

To recreate quality and functional university system in Nigeria, we recommend the following:

The Government should:

- *Ensure adequate funding:* Government should place high premium on education, and particularly university education by providing adequate funding all year round to revitalize the university system and subsequently support adequate engagement of staff in the required mix, improve conditions of service for staff, provision of basic infrastructures (i.e. up-to-date teaching and research facilities), virtual libraries and information communication technologies and internet connectivity.

- *Checkmate the frequent labour disputes and closures of universities:* Government needs to checkmate incessant strikes by honoring all agreements entered into with the various unions as well as properly motivate staff (financially and improve the working conditions and policies) to make them more dedicated and effective in their jobs.

- *Halt Brain Drain of both students and Faculty:* Most students that go out of the country to study are ultimately lost to those countries where they go to study, as they seldom return back to the country after their studies. This trend therefore

needs to be halted to appropriate and maximize the future potentials of these students to the advantage of the country's development. In particular, there is need to put in place measures that will reduce brain drain of faculties in the university system to help reduce the exit of skilled manpower out of the country. This will involve adequate compensation of skills. It is wasteful to use public funds to train high-level manpower and for such manpower to then be "drained" by attractive external bodies and countries.

- *Expand access to university education for the teeming Youth:* There is the need for creative initiatives to expand access to a higher proportion of applicants on a sustainable basis henceforth. The carrying capacity of the existing universities should be increased through massive injection of funds for infrastructural expansions and establishing more universities why not compromising quality. Another alternative is to encourage and license more private universities but with subventions or grants extended to them to facilitate absorbing more students at subsidized costs.

- Hold university administrators accountable: Several Nigerian universities are certainly poorly governed and the internal systems in these universities including their governing councils are incapable of holding the administrators accountable. The government, therefore, need to enforce adherence to every element of proper accountability and good governance among the ranks of university administrators. There is also the need to revisit and overhaul the criteria and processes for selection of heads of universities especially federally-owned universities which have become local ethnic institutions where only indigenes and/or the dominant local ethnic groups can aspire to the position of the Vice-chancellor. Historical facts showed that during the glorious years in the annals of Nigerian universities across the country, only accomplished scholars and of diverse tribal/ethnic inclinations were appointed heads at one time or the other. The university system, therefore, needs to be re-configured along this model.

- Forge links between Universities and Private sector: Governments must create an incentivized environment for strengthening university–private sector linkages through science and technology strategies, legislation on intellectual property rights and funding for R&D, among other items.

The University System should:

- Prioritize funding: Universities must prioritize other funding sources in view of declining receipts from Government. The world's best universities have huge endowments and support from the private sector. Harvard University had an endowment fund of $38.3 billion in 2018 and endowment per student of $1.736 million in 2015, followed by Yale University at $29 billion ($2.073 million per student in 2015) and Stanford University at $26.4 billion ($1.323 million per student in 2015). While comparable statistics are not available for Nigerian universities, evidence indicates that endowment funds are quite low in these universities and they need to step up efforts at attractiSng private funding.

- *Ensure vibrant staff development programmes:* Staff of universities, especially the teaching staff need to be up to date on the frontier of knowledge in both teaching and research engagements. To make this possible requires that the lecturers be properly

and adequately exposed through seminars, workshops, attendance at conferences (both at local and international arena), collaborative researches and mentorship. Hence, the need for a comprehensive and all-inclusive staff development programmes covering every staff in the university for free and on a regular basis.

- *Initiate more innovative ways to expand access for admission:* There is the need for more innovativeness and creativity with the university system on more effective ways to particularly increase access for the teeming prospective applicants for placement in the university.

- *Stem the tide of sexual molestation" and/or "grades for gratification":* The pockets of efforts being made in some universities on this issue/problem are recognized. However, there is the need for the university system as a whole to work on a holistic approach to the problem.

- *Foster stronger university-industry linkages*: The university system needs to more closely work with the industry to forge stronger linkages. In doing this, there is the need to commence a study series of manpower needs and skills set requirements of the industrial sector on a 5 years period basis. In addition, every university should henceforth engage in tracer studies of their alumni in industries periodically. In these ways, the gap resulting from the current miss-match in skills set supply by the universities and demand by industry can be closed. These initiatives would also constitute a basis for proper manpower planning and training programme in the country.

- *Shore up relevance*: Universities need to become increasingly relevant by providing evidence-based inputs into policy formulations and implementations and spearhead the technological revolution to spur relevant innovations and development in the country. A renewed agenda must focus on skilled human resources for economic growth, especially in science and technology, to be prepared for the unfolding fourth industrial revolution and the global shift towards robotics, cloud computing and artificial intelligence. Many Nigerian universities produce only half-baked graduates that are not fit for the world of work because of the way they are taught and the absence of curricular reviews that should respond to the calls of the nation and industry's contemporary needs. In this regard, uuniversities must break free of outmoded paradigms, some dating to the colonial era, if they hope to contribute to meaningful progress.

- *Promote and sustain diversity and internationalization programme:* Diversity in the mix of students and faculty members that transcends diverse nationalities is the hallmark of high standard, high quality and the international universities. Diversity of students and staff is currently non-existent in most Nigerian universities. Among the few, particularly the first-generation universities, it is equally very low. There is, therefore, the need for the university system to promote and sustain diversity and internationalization programme in every university.

The Industry should

- *Forge collaboration with Universities*: The private sector must also reach out to universities to strengthen links between universities and businesses. A strong

productive private sector requires robust input from universities and other institutions of higher education for knowledge generation and skill development of the workforce. Industry must collaborate with the university system by sponsoring and financing researches that are potentially beneficial to their operations, profitability and growth.

- *Create opportunities for internship for staff and students:* Industry should also assist the university system with opportunities for staff and student visiting programme/industrial attachment; and development and resources for staff development, and infrastructural as well as programme development.

Author details

Emmanuel Nnadozie[1], Afeikhena Jerome[2] and Omo Aregbeyen[3]*

1 African Capacity Building Fund (ACBF), Harare, Zimbabwe

2 Department of Agriculture, Rural Development, Blue Economy and Sustainable Environment, African Union Commission, Addis Ababa, Ethiopia

3 Department of Economics, University of Ibadan, Ibadan, Nigeria

*Address all correspondence to: omoaregbeyen@gmail.com

IntechOpen

References

[1] Otonko J. University education in Nigeria: History, successes, failures and the way forward. International Journal of Technology and Inclusive Education (IJTIE). 2012;**1**(2):44-48

[2] Egorov AA, Leshukov OV, Gromov AD. The role of universities in economic development of Russian regions. In: Basic Research Program, Working Papers Series: Education WP BRP 41/EDU/2017. Moscow, Russia: National Research University Higher School of Economics (HSE); 2017

[3] Goldstein HA, Maier G, Luger MI. The university as an instrument for economic and business development: U.S. and European comparisons. In: Dill DD, Sporn B, editors. Emerging Patterns of Social Demand and University Reform: Through a Glass Darkly. Oxford, UK: Pergamon; 1995. pp. 105-133

[4] Ojudu B. Leadership and the Challenges of Higher Education in Nigeria. Being the Fifth Senior Staff Association of Nigerian Universities. Abeokuta: Federal University of Agriculture; 2012 (SSANU-FUNAAB) Distinguished lecture on 31st of October, 2012

[5] Bamiro. The Nigerian University System and the Challenges of Relevance. Akoka-Lagos: Convocation Lecture University of Lagos; 2012

[6] Asiyai RI, Oghuvbu EP. An empirical analysis of the causes and possible solutions to decline in quality of tertiary education in Delta state, Nigeria. Journal of Sociology and Education in Africa. 2009;**8**(2):1-13

[7] Chigozie AC. Understanding Brain Drain in Nigerian Universities [thesis]. Dissertation in Development Studies. Sweden: Department of Sociology, Graduate School, Lund University; 2014

[8] Adebayo A. Brain drain-brain gain: Leveraging the Nigerian diaspora for the revitalization of Nigerian higher education. In: Paper Presented at the 25th Conference of the Association of Vice Chancellors of Nigerian University, held at Osun State University, Osogbo. 2010

[9] Mwiria K. University Governance: Problems and Perspectives in Anglophone Africa". AFTED Technical Note, No. 3. Washington, D.C.: The World Bank; 1992

[10] Kauffeldt JK. The Commission for Higher Education in Kenya: A Case Study Regarding the Establishment, Role and Operations of an Intermediary Body in the Higher Education System of a Developing Nation. An unpublished Doctoral Thesis, Ontario Institute for Studies in Education. Canada: University of Toronto; 2009

[11] Obondo AT. Politics of Participatory Decision-Making: The Case of Kenyatta University and the University of Nairobi. French Institute for Research in Africa; 2000 Les Cashiers, Review no 19, November-December

[12] Task Force on Higher Education and Society. Higher Education in Developing Countries: Peril and Promise. Washington, DC: Task Force on Higher Education and Society, World Bank; 2000

Chapter 17

Perspective Chapter: Artifact Remains in Indonesia as an Object of Field Study of Learning Media for the History of Indonesian Fine Arts Course

Iswahyudi

Abstract

Education is basically a social institution that functions as organized intelligence or becomes the center of various intelligences that are organized to serve the existing social system. As an integral part of that process, educational media is something that every professional teacher must master. In addition, educational media can be used as an effective means of communication in order to obtain an interactive teaching and learning process. One of the media for art education, both symbolic and aesthetic. Symbolic artifacts can be categorized in non-formal aspects because they are more general in nature and prioritize the value of symbols. Artifacts that are aesthetic in nature are categorized as formal because they are more specifically as works of art. They are objects made by humans in the past that are considered to have symbolic and aesthetic value. The reason that is basis of this writing is because of the existence of artifacts in various forms which are historical relics as it is known that there are many in various regions in Indonesia.

Keywords: artifacts, educational media, fine arts history, Indonesia, field studies

1. Introduction

Education is basically a social institution that functions as organized intelligence or becomes the center of various intelligences that are organized to serve existing social systems. As an integral part of that process, educational media is something that must be mastered by every professional teacher. In addition, educational media can be used as an effective means of communication in order to obtain an interactive teaching and learning process [1]. One of the fine art education media both symbolic and aesthetic. Symbolic artifacts can be categorized in the non-formal aspect because they are more general in nature and prioritize symbolic values. The aesthetic artifacts are categorized as formal because they are more specific works of art.

In line with these two meanings, non-formal and formal approaches emerge in analyzing effect. In this case, the non-formal and formal approaches to artifacts are compatible with the structural approach. This assumption was influenced by structuralist thinking which initially developed in France and America in the 1960s [2]. In this approach, there is a tendency to transform artifacts as clear evidence of the presence of works of art with the results of creation or the artist's thought processes. This approach aims to interpret artifacts not only from aesthetic principles which are used as empirical normative aspects but are developed into theoretical concepts.

Among the various structural theories, there is one that is used, namely the analogy method. As stated by Barrett that basically art has similarities in terms of the rules of science, including concepts, procedures, and criteria [3]. This analogy method also supports evaluative aspects, as well as totality coverage forms. This includes various artifacts that have ideological, aesthetic, psychological, cultural, and philosophical aspects. The construct of this relationship cannot be separated from the three accompanying components, namely the artist, the work, and the appreciation.

The development of artifacts as visual media is actually an evolutionary development of human creativity. So in this case creativity is a historical command of a civilization. The development in this case is not distinguished between primitive patterned artifacts and modern patterned artifacts but viewed from the aspect of formalism. This aspect demands more internal coherence which limits itself to the form of the artifact [4]. So in this case, primitive and modern are no longer distinguished into low culture and high culture [5], but because of their exclusive attitude, they are seen as curious and civilized.

2. Visual media in non-formal aspects

Talks about artifacts in the non-formal category in terms of substance are mostly associated with other factors. According to Martin & Jacobus, each type of artwork has an equal value and is always related. In addition, in terms of aesthetics, it is not only enjoyed but can increase awareness of ourselves and our world together [6]. This non-formal approach has been refuted and considered inappropriate, especially for artifacts from the pre-nineteenth century and mystical ones, for example, from the East [7].

When returned to its cathartic nature, artifacts cannot be seen based on realistic assumptions but also from their functional values, so an interdisciplinary approach is needed outside of aesthetics as an auxiliary science. This approach is actually more focused on the first component, namely the artist, so it is often referred to as the genetic approach [8]. By trying to understand artifacts as a medium for art education, there is a possibility that the development of Indonesian art can be studied through these various methods and theories. This is based on the fact that many of the artifacts were self-produced by the Indonesian people along with their historical journey, from prehistoric times from Homo Sapiens to the present.

In prehistoric times, artifacts can be divided into permanent artifacts such as cave art and smaller artifacts that are mobile art. These various artifacts have very high and noble cultural values because they can be used to determine someone's skills. The sculpted artifacts always imitate the object with expressive linear strokes and with primary or neutral colors so that magical impressions are obtained. As Plato said, seeing an imitation can evoke feelings in him [9]. So in this case mimesis is still placed as the main driving force of creation, even though natural phenomena are still accepted

instinctively and are usually expressed with geometric lines in abstract form. In this case, the value of transformation can be found not in the lines and colors used as a means of developing techniques. But more concerned with practical purposes. This assumption can be equated with the theories of primitive science, namely in a power called sympathetic magic [10].

Turning to the historical period, visual media points more to the development of creativity and high aesthetic value. Along with the emergence of the institution of the kingdoms resulted in artistic life getting protection. Borrowing Norbert's theory, it can be said that with the stability of the king's power, civilization will become more refined, giving rise to classical values in its cultural products [11]. In line with the iconography that prevailed in this classical era, art must adhere to two Great traditions, namely Hindu-Buddhist or Indian and Islamic. The formation process begins with culture borrowing which is then developed with the creativity of the Indonesian people themselves. The most commonly known visual media are temple buildings and their supporting devices [12]. As a building that has an important meaning, the temple is indeed difficult to find its exact counterparts except in India so various components must be rooted in Indian traditions.

In its development, there are two different styles, namely the Central Javanese style and the East Javanese style. The East Java period coincided with the entry of direct cultural flows from India, namely Amaravati art in the II-III AD centuries, Gupta art in the IV-VI centuries, Pallawa art in 500 - 750 AD, and Pala art in 700–900 AD [13]. These characteristics can be seen in Buddhist temples that accept elements of Gupta and Pala art (northwest India). In Hindu temples, it looks more influenced by the Chalukya and Pala or South Indian patterns [14]. The most common feature found in the temples of Central Java is the existence of Silpasastra as initially seen in the Dieng temples and the Gedongsongo temples. In this case, the most appropriate example is the Arjuno temple because it has flat and wide feet, the upper part of the body of the temple is shaped like a cube and the roof is also similar to the arrangement of the cubes, the higher the size the smaller the cube.

In contrast to the temples of the East Java style, which no longer accept the direct flow of Indian culture, in this case, it seems to show a decadence or degeneration. This view is paradoxical because changes in the East Javanese style indicate a local development or what is often called local genius. Compared to the Central Java temples which show a stronger impression of the building due to their chubby shape, East Java temples are generally slimmer and are always accompanied by horizontal frames, as if evenly distributed and merged into elements of art. more elaborate buildings and decorations.

Krom and Stutterheim believe that the change from the Central Javanese to the East Javanese style was not caused by the loss of quality associated with the decline of Indian influence but by the reappearance of native Indonesian elements. This is a reminder that art that serves religion as a measure is not a beauty and splendor but rather a function whose religious value must be accepted [15].

The most interesting moment during this East Java period was the union of Shiva and Buddhism, which in this case had never happened in India. The relationship between Hinduism and Buddhism in the East Java period was very close because both of them could live side by side so that both were made the state religion. In the development of these two religions, especially from the reign of the Singasari kingdom until the Majapahit kingdom, they were united as the state religion by way of syncretism or Tantrayana [16]. Hinduism and Buddhism as religions that both originate from India are known to have harmonious similarities, especially in terms of their

conception of divinity. This is shown in the conception of divinity contained in Saiva Siddhanta and Mahayana Buddhism, which are a school of Shivaism and Buddhism that influence each other in Indonesia [17]. In Saiva Siddhanta, there is a single Tri or three highest truths called Siva-tattva, Sadasiva-taatva, and Mahesa-tattva. Each of these tattvas is represented by Paramasiva with his Niskala realm, Sadasiva with his Niskala-Savala realm, and Mahecvara with his Sakala realm. Furthermore, from Siva-tattva which is passive, five active cakti are derived, namely Paracakti, Adicakti, Icha-cakti, Jnana-cakti, and Kriya-cakti. Then the five cakti and Paramasiva will manifest themselves as Sadasiva-tattva and Maheca-taatva.

The Trinity or the three truths in the Mahayana book are Buddha, Vajrasatva, and Avalokitesvara. Each of them is in Dharma-kaya, Sambbhoga-kaya, and Nirmana-kaya. Furthermore, Buddha or Adi Buddha is also said to manifest himself in Pancatathagta (located in Barabudur) namely Wairocana, Aksobya, Ratnasambhawa, Amitabha, Amoghasidi. To strengthen their position, the five Tathagatas were also given cakti, which is called Pancatathagatadewi (in Jago temple), namely Bharali Dhatvisvari, Bharali Locana, Bharali Mamaki, Bharali Pandarawasini, and Bharali Tarasakti [18]. From the same basic conception of the Godhead of the two schools, I.B. The Mantra concludes that Dharma-kaya is parallel to Niskala, Sambbhoga-kaya is parallel to Sakala-Niskala and Nirmana-kaya is parallel to Shiva Buddha. With the existence of this same principle, if it is not supported by an atmosphere of harmonious relations among its adherents, then syncretism will not be realized. This can be proven by the situation in India which reminds us that Buddha himself is the avatar of Vishnu [19]. This attitude of tolerance was reflected during the reign of the Singasari – Majapahit kingdom, namely by the existence of temples and literary books.

Tolerance is displayed very harmoniously in the temple buildings, for example, seen in Candi Jago where the reliefs show a background of Hinduism and Buddhism. Reliefs that are Hindu in nature are shown by the stories of Partayajna, Arjuna Wiwaha, and Krsnayana while Buddhist characteristics are shown by the existence of reliefs of animal stories (Tantri) and Kunjarakarna [20, 21]. Furthermore, Jawi temple can be said as the result of a perfect blend of Hindu-Buddhist. This is indicated by the presence of Hindu statues, namely Nandiswara, Durga, Brahma, Ganesha, and Nandi at the bottom of the temple. Meanwhile, the nature of Buddha is indicated by the presence of a roof in the form of a stupa or dagoba.

The peak of other developments includes those found in the reliefs, which in this case are carved in a bas-relief manner. This sculpture shows its decorative nature by depicting figures that are not naturalist in proportion but are slanted (enprofile). Van Stein Calenfels said that the relief form became flatter or thinner until the end of the East Java period. The reliefs that developed at that time had two styles, namely the wayang style or style based on the Ramayana - Mahabharata story and the kakawin style based on kakawin stories, speech, and wawacan. In addition to these two styles, Van Stein Calenfels also still distinguishes the relief form which is not based on the two styles [22]. This difference is based on its simple form because it depends on the place where the temple was built. The temples that were erected in the palace complex area reflect the luxurious and majestic reliefs known as the palace style. Then the type of temple that is located far from the palace, which in this case is usually found in a hermitage, has a simpler relief form so it is often called a mandala-style relief.

The end of Hindu civilization in Java at the end of the fifteenth century was preceded by a new civilization, namely Islam. The development of art, which had reached its peak, became a dilemma where people at that time had to build sacred buildings that were not allowed to depict living creatures. Something unique

possessed by the artists at that time was that a change in culture was not responded to with an attitude of surprise but instead caused them to be more creative.

In this case, the Mantingan mosque turban complex represents the transition period from the Hindu-Buddhist religion to Islam. In the Mantingan mosque, there are two relief panels carved on a piece of stone on two sides back and forth. The first panel contains scenes of the characters Rama and Laksmana accompanied by the panakawan while the second panel depicts a lotus pond whose leaves and flowers are arranged beautifully so that it seems to form the body of an elephant. An easy guess is that the first panel was made at an earlier time than the second panel. This is because the Islamic leaders in Mantingan have taken a middle way where they do not dare to eliminate the reliefs of the Ramayana without any replacement reliefs. Then they deliberately began to shift the theme to depict animal bodies with stiliran shapes and arrangements of Lotus leaves and flowers.

Islam in its further development after its position became established has many artifacts in the form of buildings that are sacred in the form of mosques and tombs, while those that are secular are palace buildings. The mosque as it is known is a building for the worship of Muslims. In Islam, there are no rules regarding forms or spaces and rooms that must be applied to a mosque building so there is no universal mosque building structure. The various forms of existing mosques usually reflect architectural traditions and architectural elements from outside religions [23, 24]. Based on this, then known mosque buildings of Arabic, Turkish, Indonesian, and so on.

Broadly speaking, mosques in Indonesia have special characteristics, including: 1. Having a perimeter fence with one main door, 2. Having a square floor plan, 3. Having a porch in front of or beside the main prayer room, 4. Having a mihrab, 5. The roof is overlapping.

Tomb architecture is the most common artifact remains in Indonesia. Graves are always associated with one of the cycles of human life, namely birth, life, and death. Death in the Islamic sense is a human journey toward life in the hereafter which in this case takes place through two stages, namely the waiting period in the grave and eternal life. As it is known that Islam as a divine religion has the concept of homo equalism, namely that each individual is responsible for all his actions and the existence of life after death [25].

From this Islamic conception of death, Islamic tombs usually contain calligraphy writing which generally reminds people of the existence of life after death. These calligraphic writings usually quote the letter Al-Baqarah verse 196 which contains warnings about death, the last day, and forgiveness. This verse is often called Ayat Kursi which is usually also intended as a starting point for rescuing people who have died. Judging from the architectural form of the arrangement of Islamic tombs in Indonesia which consists of a grave in the form of a room where the body is placed and above it, there is a tomb in the form of a rectangular building facing north-south. Some of these buildings are flat and some are tiered. From the aesthetic point of view, the tomb is a manifestation of the artist's work in the form of carvings and architectural forms carved on the maesan, jirat and cupola.

The Kraton building as a secular building is a central part and center of activity which is located adjacent to the mosque as a religious center. These buildings were found in many Islamic Javanese kingdoms which were located inseparable from the main square as a gathering place for many people, mosques, and markets [26, 27]. Then for palaces outside Java, they have different shapes, for example, in Aceh, which mostly faces north. Around the palace there are religious buildings, namely in the northwest there is a mosque and in the east, there is a religious court. In Medan, there

is the Deli Sultanate palace which looks similar to the palaces of the Moghul kings in India. Deli Palace is different from other palaces because of the existence of the square which is to the east of the palace and the location of the mosque is far from the palace. Likewise the Ternate palace is located east of the square and mosque is to the south of the palace.

3. Visual media in formal aspect

Artifacts, apart from having to be discussed with functional values, can also be digested in terms of form because they are useful for measuring their aesthetic content. It must be admitted that in addition to the beauty obtained, it also requires a certain technique to make it happen. So in this case, the artifact must be viewed formally according to the applicable criteria. The formalistic theory has been presented by Harold Osborne who says that in measuring aesthetic values, organic and systemic unity is needed [28]. This theory was later strengthened by Liang Gie as a form theory because artifacts must have form and meaning [29]. Actually, structuralist thinking does not really care about the non-formal aspects that tend to be reception theory but focuses more on the formal aspects which require hermeneutics to realize explanations. This method is the ability to provide a verstehen interpretation of each artifact from each era [30]. When considering the goal to be achieved, namely that these artifacts must be able to facilitate communication, then semiotics is needed which is the science of signs as elements of logical structures. In this regard, the opinion of Charles Sander Pierce can be used to analyze it [31]. According to him, signs are divided into three, namely icons, indexes, and symbols. An icon is a sign in the form of a similar relationship. An index is a sign that has a causal relationship, and a symbol is a sign that is based on an arbitrary relationship. This arbitrator relationship does not occur directly so a conventional deposition and acknowledgment period is needed.

The problem that arises in relation to signs as symbols is that there is nothing intrinsic in artifacts that designates something that must be interpreted that way. There is no obligation to accept an aesthetic meaning of an abstract painting, for example, by having to refer to the rules in saddangga or methods for assessing beauty in traditional art. Beauty in a structural sense is not a substantial meaning but rather a generally accepted acknowledgment.

This formal aspect must focus on artifacts so that there must be a certain distance to collective life. This requires understanding artifacts only through the artist's personal emotions so that the aesthetic criteria are still placed as something virtuous. The easy-to-know feature of this aspect is because artifacts must have elements of sensory sensitivity such as composition, plane, level of precision balance, and structure.

This phenomenon is the absorption of the West because, after the Renaissance, humans began to be aware of their individual values so that rationality could open the dawn of reason to cut through the darkness of the world. The industrial revolution that occurred in the eighteenth century as a peak had a negative impact on the cessation of creativity because everything had to be determined by standardization and rationalization.

As a reaction against life in Europe in 1890, the Art Nouveau movement emerged. This movement is more in favor of pre-industrial values and wants something new, although in terms of aesthetic values it is still related to industrial civilization, such as with streamlined forms, and in the world of architecture and design, or form follows

function [32]. To try to understand artifacts in a formal aspect, what happened in Indonesia is something interesting. This needs to be known because modern art seems to give a power of its own, contains various problems and demands a special sense of sensitivity. In the above analysis, it can be understood that modern art is a modern reality that is not always in line with the movement of life of some of its people, therefore it is always a subject of discussion and sharp focus.

Modern art is more moving from solitude so artists always uphold their freedom, must be creative and original innovative. It seeks new insights and techniques and new possibilities. This creative activity demands material embodiment, namely with the work itself. After he joins together or simultaneously with his artistic appreciation, the artifact becomes the artist's personal expression. The problem that arises next is whether the artifact will be valued or not accepted by the community. This requires the role of an intermediary, namely the presence of art critics as parties who deliver to the community. These actions are transformative from the formalist aspect.

Feldman in relation to criticism divides it into four stages, namely description, form analysis, interpretation, and evaluation. The description stage is an assessment of the artifact in general. The shape analysis stage is the assembly stage of the artifact content obtained from the description whose purpose is to find out about the composition of the materials and figures. The interpretation stage is an attempt to interpret the artifact so that it is able to give meaning to the description stage and form analysis. This interpretation stage leads to actual criticism because the expression of meaning contained in it can be explained. The evaluation stage is an additional stage after the previous three stages have been completed. It is possible that up to the interpretation stage alone, it can give meaning to the artifact so that the evaluation stage is not mandatory. However, if it is associated with certain considerations from the observer, the evaluation stage must still be carried out.

In its function as an educational medium, formal artifacts can only be reached in two-dimensional and three-dimensional products. Two-dimensional art is generally divided into two major groups, namely representative and non-representative [33]. Representative art is presenting the form of an object close to optical similarity, which is often found in realist and naturalist style paintings. Non-representative art presents a form that deviates from the representative one which is done by means of deformation or stylization. The flow in this art can be found in expressionism, impressionism, abstractism, cubism, surrealism, and pop art. Art that is grouped as three-dimensional art in this case is represented by sculpture. Sculpture in Indonesia has nothing to do with previous traditions, but this phenomenon originated from the experiments of a number of painters who wanted to find other forms of media of expression [34]. An example is a painter Affandi who made his first sculptural work using clay in 1940. His work was not scheduled to be exhibited but only served as a companion to his paintings. This tendency to experiment with sculpture is due to the fact that there are expressive similarities in making paintings and sculptures. Affandi's experimental success as a sculptor was followed by other painters and culminated with the establishment of formal sculpture education in 1950 at ITB (Bandung Institute of Technology) Bandung and ASRI (Indonesian Fine Arts Academy) Yogyakarta. Not unlike two-dimensional art, the sculpture is also divided between realist and abstract. Then as another tridimensional is the monument. Artifacts also have nothing to do with temple architecture, but their development goes hand in hand with modern sculpture. Also, the purpose of making a monument that is easy to understand is to commemorate various important events.

4. Conclusion

The development of artifacts as visual media is actually an evolutionary development of human creativity. So in this case, creativity is a historical command of a civilization. The development in this case is not distinguished between primitive patterned artifacts and modern patterned artifacts but viewed from the aspect of formalism. This aspect demands more internal coherence which limits itself to the form of the artifact. So in this case, primitive and modern are no longer distinguished into low culture and high culture, but because of their exclusive attitude, they are seen as curious and civilized.

Artifacts as educational media are one of the best alternatives and can be done by means of field studies. It's just that because the existence of these artifacts is scattered from each other at great distances, they can be reduced by playing video films or other digital technology methods.

The description above shows that the development of artifacts according to the dimensions of time, which is actually widely known by the general public. However, if an observation is made of each momentum that has gone through the selection, it will be able to open an aesthetic dialogue from each according to its type and style. It is said that these aesthetic dialogues are acquired cumulatively based on their nature, namely horizontally through acculturation and vertically through historical inheritance, thus eclecticism will be found.

If the artifact is associated with a work of art, it will not be able to become an objective description of facts as in science because there is a hidden factor, namely the artist. Thus, to find out the work in accordance with its meaning will be done through a structural approach. The structural approach in the West is useful for transforming open awareness of insight. This is to form a futuristic because empirical normative is considered not sufficient. The art also always faces various problematic realities that must be solved by conceptualizing it through interdisciplinary means.

The aspect that must be distinguished is that artifacts are divided into informal and formal. The non-formal aspect in terms of transformation is easy to do, but the formal aspect is more difficult to do because it is individual so it is necessary to search for formal and universal boundaries. The ideal goal in the non-formal aspect is how to apply the aesthetic normative, whereas in the formal aspect it is how to realize the theoretical aspect. This can be overcome by making an analogy that is interdisciplinary, semiotic, hermenitic, and diachronic-synchronic.

Author details

Iswahyudi
Yogyakarta State University, Indonesia

*Address all correspondence to: iswahyudi@uny.ac.id

References

[1] Hamalik O. Media Pendidikan. Bandung: Alumni; 1986. p. 23

[2] Craib I. Teori-Teori Sosial Modern. Jakarta: Rajawali Pers; 1992. p. 176

[3] Barret M. Art Education: A Strategy for Course Design. London: Heinemann Educational Books; 1982. p. 93

[4] Sutopo HB. Kritik Seni II. Surakarta: Universitas Sebelas Maret; 1986. p. 6

[5] Yuliman S, Rupa DS. Simposium Nasional Seni Rupa. Surabaya: Dewan Kesenian; 1984

[6] Martin DF, Jacobus LA. The Humanities Through the Arts. New York: Mc.Graw Hill Book Company; 1983. p. 454

[7] Falkenheim YV. Roger Fry and the Beginning of Formalist Art Criticism. Ann Arbor: UMI Research Press; 1980. p. 6

[8] Smith A. Ralph, Aesthetics and Criticism in Art Education. Chicago: Rand McNally & Company; 1966. p. 343

[9] Huizinga J. Homo Ludens. Jakarta: LP3ES; 1990. p. 225

[10] Baal, J. van, Symbols for Communication. Assen, Koninklijke van Gorcum&Com NV, 1971: 56

[11] Elias N. The Court Society. England: Basil Blackwell Publisher Limited; 1983

[12] Wales HG. The Making of greater India. A study in Southeast Asia Culture. Journal of Royal Asiatic Society. 1949

[13] Vogel JP. Influences of Indian Art. London: The India Society; 1925. p. 70

[14] Holt C. Art in Indonesia. Ithaca, New York: Cornell University Press; 1967. p. 53

[15] Krom NJ et al. "Oud-Javaansche Kunst", Bijdragen tot de Taal-, Land-, en Volkenkunde, 1923

[16] Kern JHC, Rassers WH. Ciwa dan Buda di Kepulauan Indonesia. Jakarta: KITLV (LIPI); 1982. p. 17

[17] Mantra IB. Pengertian Siwa-Buda Dalam Sejarahnya di Indonesia. In: Laporan Konggres Ilmu Pengetahuan Nasional I. Djakarta: MIPI. 1958. p. 279

[18] Kats J, Kamahayanikan SH. Oud Javaansche Tekst met Inleiding Vertalingen Aantekeningen. Gravenhage: Martinus Nijhoff; 1910. p. 115

[19] Mulyana S. Pemugaran Persada Sejarah Leluhur Majapahit. Jakarta: Inti Idayu Press; 1983

[20] Kempers B. Ancient Indonesian Art. Cambridge: Harvard University Press; 1959. p. 84

[21] Pijper GF. The Minaret in Java. Leiden: E.J. Brill; 1947

[22] Callenfels PV. De Sudamala in de Hindu Javaansche Kunst. Verhandelingen Bataviaasche Genootschap, 1935

[23] Ettinghausen R. The Man Made Setting: Islamic Art and Architecture. London: Thames & Hudson; 1977. p. 63

[24] Feldman EB. Art as Image and Idea. New Jersey: Prentice Hall Inc; 1967

[25] Quran, XCIII: 4

[26] Ambary HM. Sejarah Seni Rupa Indonesia. Jakarta: Proyek IDKN; 1977

[27] Osborne H. Aestetics and Art Theory. New York: E.P. Dulton & Co. Inc; 1970. p. 24

[28] Liang G. The, Garis Besar Estetik. Yogyakarta: Super Sukses; 1976

[29] Panofsky E. Meaning in the Visual Art. Chicago: University of Chicago Press; 1983

[30] Ankersmith. Refleksi Tentang Sejarah. Jakarta: PT. Gramedia; 1987. p. 163

[31] Nurgiyantoro B. Teori Semiotik Dalam Kajian Kesastraan. In: Cakrawala Pendidikan No.1 Th. XIII, IKIP. Yogyakarta; 1994. p. 56

[32] Heskett J. Desain Industri. Jakarta: LP3ES; 1980. p. 89

[33] Yuliman S. Tiga Puluh Lima Tahun Seni Rupa Indonesia. Bandung: Departemen Seni Rupa ITB; 1984. p. 2

[34] Soedarso SP. Seni Patung Indonesia. Yogyakarta: Badan Penerbit ISI Yogyakarta; 1992. p. 46

Section 4

Embracing the Future in a Global World

Chapter 18

Perspective Chapter: Academia as a Culture – The 'Academy' for Women Academics

Matthew James Phillips

Abstract

This review explores what is known about women's experiences and identities within Australian public higher education to assist readers in contextualising the issue. In doing this, the chapter summarises what is known thus far about the key tensions that are experienced by women in academia, underpinned by the influence of the gender binary, heteronormativity, and intersectionality. Then, what is known about the academic identity thus far within the extant literature base is presented, as well as how the identity formation process can be complex and difficult to engage in for women academics. To conclude the chapter, the tensions are extended on to explore how academic ways of being were introduced and influenced by coloniality, as well as acknowledging how the neoliberal episteme has become embedded within the academic system to influence women and their academic experience over time. The aim of this chapter is to liberate thinking surrounding the experiences of women academics through the reviewing and discussion of the literature base and encourage further conversations and connections between academics worldwide surrounding this topic.

Keywords: women, academia, experience, identity, higher education

1. Introduction

Academia is a highly institutionalised environment, characterised by a hierarchical, traditional, and selective culture [1]. Within this environment, individuals are differentiated at multiple levels, for example, students, academics, support, and administrative staff, that all have differing responsibilities, access to opportunities, and positionings which can both exacerbate and reproduce social and institutional inequities [2]. The traditional culture of academia (which is based on hierarchical, bureaucratic systems) was founded on patriarchal, imperial, and colonial values that worked to define and maintain a specific maintenance of gendered roles and regulations, which have been proposed to disadvantage women [3, 4]. The operation of academia is similar to other organisational contexts world-wide, whereby the available discourses on organisational logic, as well as how organisational ways of being are defined, is embedded within the relations and worldviews of men [5, 6]. Based on the organisational logic being geared towards men, it can be difficult to both initiate

and sustain social change relating to gendered equity within academia. This is based on the persistence and maintenance of gendered processes and structures which can be influenced by heteronormative, gendered practices, that are partly ascribed to the construction and operation of the academic institution that works to attribute and legitimise neutrality to these processes [3, 7]. These institutional, gendered processes (which can be based on masculinities) can be invisible to most members of academia as they are based on systems of knowledge and belief systems that work to explain and justify current patriarchal and heteronormative practices [4, 8]. The justification of current practices can maintain how the academic system operates, to inform the academics' view of the way that things exist [1].

2. The gender binary: maintaining how things exist

Underpinning the justification of current gendered practices and the way that things exist for women in academia is the view of gender, sex, and how it is theorised to exist in a binary manner. The gender/sex binary refers to the perspective that sex is binary in nature and can directly determine gender [9, 10]. Within this context, 'sex' is considered as the biological composition of an individual (e.g., anatomy, chromosomes), while 'gender' refers to the roles associated or how one identifies (e.g., what it means to be a woman or man in a specific context, self-categorisation as a 'woman' and 'man') [9]. The gender binary is socially consequential, considered as not only descriptive (e.g., outlining what sexes and genders exist, and how the concepts are related), but also, pro- and pre-scriptive (e.g., dictating how gender and sex should or should not exist, and how they can be related) [9, 10]. In this manner of thinking surrounding gender and sex, a social system is enforced where individuals with two X chromosomes are expected to develop as biologically female, identify as women, and act in accordance with feminine stereotypes, whereas those with a X and Y chromosome develop male bodies, identify as men, and act in accordance with masculine stereotypes [11]. Additionally, the gender binary constructs expectations surrounding gender that work to construct men and women as possessing both complementary and oppositional identities, each with its own specific attributes (e.g., 'men are assertive', 'women are caring') [9, 10, 12, 13]. This way of thinking, doing, and being demands a compulsory conformity to individual gendered performances as either female or male (terms which are considered within the binary as mutually exclusive) [9, 11, 13]. Additionally, the binary dictates how the gendered performance must be congruent with the sex of the individual [11].

The identification of gender can also be associated with ideologies that work to support the gender/sex binary, such as gender essentialism, and the endorsement of stereotypes surrounding gender and sex [14]. Gender essentialism is the perspective that women and men are two informative, natural, and distinct categories [15]. Increased prejudice against those who violate assumptions of gender (e.g., women in leadership positions in academia) has been suggested as related to gender essentialism [14, 15]. Stereotypes that are endorsed surrounding gender often pose men as the socially advantaged group, aligned with patriarchal discourse, particularly when distinctiveness of sex is threatened [9, 10]. These stereotypes are implicated in the devaluation of women and men who behave in ways that are counter stereotypical [9, 10, 12, 13]. In combination, these ideologies can affect attitudes towards challenging the gender/sex binary and constructs the assumptions surrounding gender in a hierarchical manner [11–13]. For example, while patriarchal theory is evident, the suppression of

women and their identities has also illuminated the suppression of different identities and sexualities, where the social organisation of sex relies upon gender, compulsory heterosexuality, and the restriction of female sexuality [11–13]. The restrictions and organisation here further perpetuate the embeddedness of the gender binary, as well as normative values surrounding heterosexuality as the valued identity.

2.1 Heteronormativity: the gender binary in practice

The collection of norms, as well as how individuals reproduce complementary and distinct genders (male and female) is considered as the practice of heteronormativity [16, 17]. Heteronormativity allows for an illumination of the mundane and everyday ways in which heterosexuality and gender more broadly are normalised, naturalised, and taken for granted [18]. Compulsory heterosexuality is not only tied into the acts, ideas, and conceptions of gender and sexuality, but additionally, it can be viewed as a foundational structure of society and culture [12, 13, 16, 17]. Here, gender and sexuality are embedded in societal structures which are connected to socialised institutions, such as family, marriage, life, waged and domestic labour, economic support, and dependency [12, 13, 17]. As such, the awareness of heteronormativity can work as a tool which allows for the analysis of systems of oppression and contributes to the understanding of how gendered structures and hierarchies can be constructed in society [12, 13, 17]. When using this tool, we can explore how sexualities are performed and expressed, and how the societal system is structured, organised, and maintained [18].

Academia, at times, has been posed as gender neutral, when in reality, organisational logic originates in the abstract, intellectual domain of being 'male' [5]. Available discourses, reality, worldviews, and perspectives are seen from this particular standpoint, and as such, gender is difficult to observe when the masculine discourses are present [5, 6]. Men have, over time, adopted their behaviours and perspectives, to reflect all individuals, and as such, this has led to organisational processes and structures being conceptualised as gender neutral [5, 6]. While women and men academics can be treated differently by their academic institutions, it can be argued that specific gendered behaviours and attitudes are disseminated into gender-neutral structures, which works to separate the organisational structures and hierarchies, from the people within them [16–18]. Stating than an organisation is gendered means that exploitation and control, action and emotion, advantage, and disadvantage, and meaning and identity, can be constructed through, and in relation to, a distinction between what it means to be male, and female, or masculine, and feminine [4, 5]. Gender is not additive, rather, it forms an integral component of these processes, and as such, exploring women in academia cannot be properly understood without analysing gender [4, 5].

2.2 The 'doing' of gender

Gender has been conceptualised as operating within organisational institutions in at least five interacting processes, which, while posed as distinct, are components of the same experience [4–6]. They are as follows:

1. Constructing gendered divisions of labour, accepted behaviours, positionings and locations in space, of power, including how the institution governs these aspects. While there may be variations in the extent of the division of gender, men almost always occupy the highest positions of power. Further, organisa-

tional decisions initiate divisions of gender, and the practices of the organisation maintain them.

2. Symbols and images can express, reinforce, oppose, and/or explain the gendered divisions mentioned above. Sources of these can be in ideology, language, popular culture, the media, dress/appearance, and television (e.g., the image of a professor is often conceptualised as a white, cis-gender, older male).

3. Processes can produce gendered social structures that result in interactions between women and men, women and women, and men and men, that enact either submission or dominance.

4. The above components assist in producing gendered aspects of individual identities, which may include being conscious of these components in choosing where and what to do for work, the use of language, clothing options, and the presentation of the self as a gendered member of the institution.

5. Finally, gender is implicated in the creation and conceptualisation of social structures, framing the relations between other structures. Gender works to influence organisational logic, with assumptions and practices that allow organisations to function manifesting daily, and with the repeated enacting of ways of being, these problematic forms of logic are repeated and maintained.

Gendered differences within organisations have been suggested as due to the overarching structure, rather than characteristics related to 'being a woman' or 'being a man' [5]. The societal hierarchical system that has privileged some, and sanctioned others, is based on these presumed binaries of gender and sexuality, where beliefs and practices about what is 'normal' in everyday life is defined and enforced by the patriarchy [12, 13, 16, 18]. The issues that women face within large organisations, such as academia, are posed because of their placement within the overarching organisational structure, where they can be overpopulated in 'dead-end' jobs at the bottom and viewed as tokens at the top [5]. Gender becomes an issue where organisational roles reflect characteristics and images of the sorts of individuals that should populate them [5]. As such, women in academia are viewed as a part of a system where they are sanctioned and condemned for not fitting in and behaving according to the system that is constructed as a given, and acceptable [16–18]. Where the impact of the gender binary, heteronormativity, gendered processes, broader institutional logic, and ways of being is identifiable, is when these systems become visible, for example, when disadvantages are experienced and people speak out, as well as problematising the system and identifying how prejudices, discrimination, inequities, and contradictory workplace practices and policies are executed and operated [19]. These discriminatory, prejudicial practices and policies have been shown to negatively impact the experiences of women within Australian public higher education, and even more so for women who adopt multiple identities and ways of being.

3. Intersectionality: a multiplicity of identities

What can assist in maintaining the status quo for women in academia is the homogenisation of their identities. In the current research context, homogenisation

illustrates how women academics have been constructed as one-dimensional, with the gender binary further perpetuating the presence of 'one type of woman' within academia [20]. Constructing women in a manner that infers they share a singular, similar understanding and experience of academia fails to integrate the multiplicity of identities and intersectional perspectives that are not privileged in academia [21]. Intersectionality refers to the numerous ways that social identifiers are mutually shaped, and can be interrelated through epistemes such as neoliberalism, colonialism, geopolitics, and cultural configurations, which can shift relations of oppression and power [22]. The interactivity of these social structures can foster life experiences in relation to forms of privilege and oppression [22]. The term was formed originally within African American feminist and critical race studies, where it has now been extended to explore the many relationships in research amongst multiple modalities and dimensions of social relations and subject formations [23, 24] Intersectionality is useful in exploring the interaction amongst categories of difference within the individual lives, practices of society, institutional structures, and cultural ideologies, as well as the outcomes when these interact, in relation to power processes [24, 25].

Social identifiers that can be acknowledged when exploring intersectionality include, but are not limited to, gender, race, class, age, body type, attractiveness, caste, citizenship, ethnicity, height and weight, education, income, immigration status, mental health status, physical ability, marital status, nationality, occupation, sex, religion, sexual orientation, and socioeconomic status [22]. These are considered as naturalised, but not necessarily natural, ways of categorising individuals [22]. By considering the plethora of social identity structures here, it allows for an expansion of the definitional scope of intersectionality to allow everyone's unique social advantages and disadvantages, to be subject to critique [22, 24, 25]. Everyone can entail the multiplicatively oppressed, but additionally, the multiplicatively privileged, where it is acknowledged that individuals can be subject to both social advantages and disadvantages [22, 24, 25]. It is important to acknowledge intersectionality within higher education, as the analyses that stem from this acknowledgement call for social justice and equity in education, as well as having the power to transform knowledge, higher education, and society [22, 24, 25].

4. The operation of academia

Within academia, it has been argued that "the structure of the labour market, relations in the workplace, the control of the work process, and the underlying wage relation are always affected by symbols of gender, processes of gender identity, and material inequalities between women and men" [5, 26]. Historically, white men have had more opportunities, and have been afforded more privilege within academia than individuals with different identities [27, 28]. Academia has been acknowledged as generally overrepresented in relation to the male gender, white students, and those of Asian ethnicities [29], and described as cold and unwelcoming to women [28]. Reasons for this have been proposed, for example, within academia, bureaucratic and patriarchal discourse is said to be embedded within the actions of all academics, with a clear focus on innovation, success, and productivity that work to value white men, rather than women and other minority groups [30]. Further, attitudes, beliefs, and solutions that are valued in academia thus far are limited in attending to the underlying economic, social, and political complexities that shape and construct the experiences of minoritised groups [12, 13, 31]. Finally, solutions have been proposed

and implemented so far that rely on a problem definition (i.e., problematising the individual, rather than the system), which is widely contested, and embedded within a discourse of male-normative competition that resolves the academic crisis as something to win, while marginalised others are left behind [1, 32].

4.1 The disembodied worker

Engaging in work within academia has been constructed as an abstract job most suited for a disembodied worker, who exists only for their work, and nothing else [5, 6]. The hypothetical 'ideal' disembodied worker is assumed to have no other responsibilities outside of their job that may impinge on said job [5, 6]. For workers who have obligations outside the boundaries of the job, this can make them unsuited for the position [5]. For example, in academia, the disembodied worker is privileged as a male worker whose life centres on his full-time, life-long, academic job, while he has a partner (presumably female) who can assist with other responsibilities and the familial obligations [5]. Further, working in a 'job' is implicitly considered to be gendered, even if the institution presents it as gender neutral [6]. The 'job' contains the division of labour and the separation of the personal and professional domains based on gender [6]. This assumes that the 'job' is particularly gendered, based around domestic life and the social production of norms relevant to familial and caring responsibilities [6]. Hierarchies in the institution are then further gendered based on the assumption that an individual who focuses all their time on their work is responsible, compared to an individual who divides their commitments is seen as uncommitted [5, 6]. As such, the concept of the disembodied worker excludes and marginalises women who, by definition, cannot achieve these expectations and standards, as doing so would require them to become 'like a man' [5, 33, 34].

5. Tensions in Women's academic experiences

The experience of working in academia, and conceptualising identity, are more complicated for women academics [35]. Barriers to women's participation in academia can impact how they identify within the setting, with many barriers suggested in the literature base that are either structurally, or individually oriented [36, 37]. There are varying explanations that have been proposed, for example, in comparison to men, women are subjected to higher expectations from other individuals in their lives, academic or otherwise [38]. Others have suggested that women may experience identity conflicts between academia and other settings, leading to invalidation and conflict in their academic identities [35, 39]. There also appear to be conflicts for women in academia between conducting 'good research', and what it means to be a 'good researcher' [40]. 'Good research' relates to the process of the work, fostering motivation, achievement, self-expression, creativity, and self-interest, whereas being a 'good researcher' relates to the outputs and conforming to ideals that meet the goals and needs of the university, such as applying for, and receiving grants, publications in high impact journals, and citations [40]. Finally, a broader neoliberal higher education research context has been proposed to contribute to the challenges experienced by women in higher education, with a focus on the increasing pressure to be productive compounding with the tensions surrounding the amount of time available to balance with one's other commitments (e.g., teaching, service tasks, mentoring, familial and/or caring responsibilities) [41].

Women academics have also been suggested to experience the proverbial trinity of faculty roles to varying degrees, for example, their teaching, service, and research responsibilities [39]. The varying degrees of responsibility within these roles depend on the positioning of the woman within the institution. Where the discrepancy lies is how women academics are expected to engage in teaching and service roles to a greater extent than male academics, who are presumed to be afforded more time to focus on their research responsibilities [35]. Faculty positions are bound to specific university contexts, as well as specific duties, but the individuals who hold these positions are not [39].

Women in senior academic roles have reported on the impact of gendered stereotypes, such as the expectation of women performing caring roles. This stereotype assumes that women are natural teachers [42], however this may not be the role that women want to adopt or are necessarily best at. Comparatively, leadership roles are stereotyped as being masculine; this aligns with the statistic that most senior leadership positions in academia are held by males [35]. Additionally, men are often evaluated according to competency, whereas women are evaluated according to their likeability [43, 44]. Women are encouraged to take on administrative roles, which may offer limited opportunities for career progression [44, 45]. These stereotypes restrict the types of roles that academics are expected to perform [46]. When women are viewed as acting inconsistently with feminine stereotypes (e.g., not wanting to adopt nurturing, pastoral care roles), and consistent with masculine stereotypes (e.g., being assertive, or self-promoting), they may experience negative consequences such as limits to their career progression for not adhering to the traditional, expected academic way of being [21].

When women engage with roles and identities outside of academia, there is a perception that their competency and commitment to the academic setting will be reduced or threatened [21, 47]. Further, women who balance work with other commitments, roles, and competing identities (for example, but not exclusive to, motherhood and/or caring roles) are perceived by their colleagues as stretching themselves too thin [47, 48]. Comparatively, men are celebrated for their attempts at balancing the work and home life and are viewed by other academics as more responsible and accountable than their women counterparts [49]. It appears that men do not face the same bind or negative consequences from occupying multiple roles in the academic setting [50]. Comparatively, it has been suggested that women must work harder to have their contributions and achievements recognised both inside, and outside of, academia [48].

Difficulties with accessing mentoring networks and role models [36, 51], experiencing the impact of implicit biases, harassment, and discrimination [52], experiencing gender stereotyping [53], underrepresentation [54], navigating masculinist organisational cultures [37], gendered divisions of faculty labour [55], and difficulties with balancing caring and academic responsibilities [56] have all been suggested as barriers to women's academic experience and conceptualisation of identity. Further, these barriers can accumulate in their effects over time, reflecting an experience known as the glass ceiling, whereby women academics are hindered by the deeply routine, embedded organisational practices and policies of academia [57]. These practices are influenced by patriarchal, gendered discourses that view male academics as the majority in academia, and how to work and identify within these fields is bound within men and masculinity [58]. The barriers for women in academia perpetuate a chilly, unwelcoming climate, which can be characterised by a lack of encouragement and recognition for women, a subtle process of devaluation, and resultant lower levels

of confidence [59]. This climate presents difficulties in identifying as an academic for women, who struggle to feel as if they belong, which can be emphasised by the routine, everyday practices that act as significant normalising and invisible barriers for them [57]. These tensions appear to be further enhanced by the complexities of navigating the ongoing structural changes within the Australian public higher education setting [60]. As such, it is clear there is a need to understand how 'traditional' Australian tertiary education systems have changed in recent times, as this is crucial to contextualising women's academic experiences and identity formation.

5.1 Women's academic experiences over time

While the literature details some of the tensions in women's academic experiences, where it is limited is in exploring how the academic and professional identities can change over time, as well as the impact of these transitions on the conceptualisation and transformation of such identities. It is important to recognise that the becoming of, and being, a faculty member is a dynamic journey which is marked by movement of some form, whether that be through promotion and/or receiving tenure, moving to other roles and/or institutions, moving beyond academia after retirement, and/or leaving due to disillusionment with the academy [61]. There is an interplay of individual and institutional dynamics that can change over time, which can influence women's home and work identities, with a multitude of differing experiences, successes, setbacks, and choices [3, 62]. The patriarchal setting, or the powerful social structures of society where women's interests are subordinated to the interests of men, appears pervasive not only in academia, but within all facets of society:

> *"Yet women's inclusion in education, the franchise, public life, and the labour market have been on terms designed to meet the needs of individual men, unfettered by ties of motherhood, childcare, and [unpaid] domestic labour. Women seeking inclusion have had to negotiate the conflicting demands made upon them by their dual role as best they could on an individual basis" [62].*

Scholars criticise the operation of contemporary society based on its failure to acknowledge that gender can be a barrier to social well-being, as well as its role in maintaining patriarchal assumptions about the roles of women and men over different time periods [61]. This is one reason proposed within the literature to support the marginalisation of women within their work and family roles:

> *"The prevailing conception of gender is understood as an ideological structure that divides people into two classes, men, and women, based on a hierarchical relation of domination and subordination, respectively" [63].*

As such, the positioning of women academics within the academic context is embedded within tensions and paradoxes between the commitment to the institution, the organisational structure, as well as broader systemic gendered roles and norms that manifest over time [17]. These tensions can form the basis for the conflicts within conceptualising identities, whereby women may desire to change the current state of being within the institution, while experiencing conflicts in their commitment to the same institution [7].

6. The academic identity within the higher education context

The academic identity refers to an individual's understanding of who they are, within their academic institution [64]. One's academic identity can influence their self-perception, as well as their perspective of how others see them [65]. How an academic identifies in relation to both the personal and professional domains has been suggested to have a significant impact (for better or worse) on an academic's work productivity and performance [48, 65, 66]. The conceptualisation of academic identities can be influenced by many elements, including working roles and responsibilities, the success, and achievements of the academic, the perceived power and voice that an academic possesses, and the pressure to be the ideal worker within the academic setting [67, 68]. Previous literature has reported on the struggles of conceptualising an academic identity (particularly by those within minority groups, such as women) [40, 48, 69], as well as the complexities surrounding the conceptualisation of identity [64], but does not consider how the notions of self, identity, and institutional governance for women in higher education interact. Additionally, there is a lack of appreciation that knowledge can be socially constructed, which can influence how different perspectives can shape institutional practices and ways of being for women academics at different career stages.

The identities of academics, and the forming of them, can be complex, and consist of various components and elements that stem from various sources [70]. One understanding of identity as a construct is that it can continually shift and change over time and is fluid [71]. For example, it has been stated that,

> *"Identity is understood not as a fixed property, but as a part of the lived complexity of a person's project and their ways of being in those sites which are constituted as being a part of the academic… having an identity as an academic, this multiple and shifting term exists alongside other aspects of how people understand their personhood and ways of being in the world. As such, it is important that personal detailed attention is paid, especially to how changes are being experienced in higher education, and how this can influence an academic's identity" [61].*

The shift acknowledged here is important to consider in combination with an understanding of identity being viewed as most influenced by the identification and interaction that an individual has with significant others (e.g., peers, family, friends) [72]. As such, the forming of the academic identity can be viewed as complex and may comprise of multiple competing influences that change and shift over time [71]. Some authors view the academic identity in line with the overall conceptualisation of identity as a fluid, shifting concept, which can differ for each individual academic [61]. Through this definition, the academic identity is considered as the understandings and expressions of one's beliefs, values, dispositions, and actions, within the higher education context [64]. The explanation here also includes the academics' perspectives on the ways of being and doing within their many roles and responsibilities [48, 65, 66].

In contrast, other authors have conceptualised an academic identity as a concrete, fixed entity [70, 73, 74]. Supporting this view is the notion that within institutions, individuals tend to be viewed as more homogenous, rather than heterogeneous, and are viewed in terms of their particular social group [73]. As such, the identity in this depiction is generally defined as a concrete, distinctive characteristic that belongs to

either an individual, or one that is shared by all members of a social category [48]. This view essentially constructs identity as comparative in nature, emphasising a degree of homogeneity within a group (i.e., a degree of sameness, or oneness with other individuals) in a particular context at a particular point in time [74].

Whether identity is viewed as fluid, or concrete, there is still an acknowledgement of a shift, with identities adapting to societal and consequential institutional changes over time that have resulted in different responses from academics [61], As such, I align with the perspective that identities have the capacity to both generate change through a continual process of deconstruction, construction, and reconstruction [75]. Identities change during periods of shifting and institutional change, which can reflect changes in the overall climate of society [72]. It is important to acknowledge and pay close attention to how these changes can influence an academic's way of being and knowing, both important aspects of the academic identity.

6.1 Pressures surrounding the conceptualisation of the academic identity

Despite the contrasting definitions on what an academic identity is, there are some similarities between these understandings. The academic identity appears to be constructed under several dimensions that are multi-faceted, as well as being influenced by social movements (e.g., neoliberalism) that can occur in different ways, degrees, and contexts [60]. Authors express that "...academic work is not what it used to be. Not because the impulse to engage in this work has diminished, but because academics now have to deal with further pressures qualitatively different to ever before" [76]. These pressures can present several challenges in how academic identities are constructed and conceptualised. Shifts between a liberal to neoliberal episteme in higher education appear to have created a more governed environment, which prompts me to question (as well as being questioned by other academics):

> *Have the changes in higher education, augmented by the neoliberal episteme, made the institution more important than the disciplines, and as such, are the disciplines now being perceived as more important than the academics themselves?*

A paradox in academia is evident, where the desire to implement change and be forward-thinking in perspective, conflicts with the institution governing individuals to follow set standards in a manner that makes these embedded practices difficult to question [44]. Claims support this notion and explores the consequences to questioning these ways of being, stating that "it is extraordinary how easily one can become a pariah in an academic community for questioning the state of being, when in reality, everyone is supposed to be so broad-minded" [77].

6.2 How do dominant academic identities manifest in higher education?

Higher education institutions govern individuals to engage in particular practices and identify in certain ways. The prominence of the neoliberal episteme has a significant influence on the normative practices within academia [78–82]. Further to this, some identities are more frequently represented (statistically) and viewed as normative within higher education (e.g., the white, cis-gender, able-bodied, heterosexual male academic) [34]. Theories and ideologies elucidate how certain identities and knowledge systems can function and be valued in higher education; these include hegemonic masculinity, and the influence of colonisation, and Eurocentrism [83–85].

Hegemonic masculinity is a theory that explains the legitimisation of the male dominant position and the subordination of women and other minority groups and identities (i.e., where hegemonic refers to dominance) [83]. The neoliberal academic context supports dominant, traditional values relating to hegemonic masculinity, and academic identities that challenge the status quo (i.e., white, cis-gendered, able-bodied, male dominance) are at a disadvantage [86]. Hegemonic masculinity operates under the assumption that the gender binary is the dominant and accepted way to categorise gendered identities [83]. Within the academic context, women are not necessarily free to forge academic identities that are authentic to their experiences, rather, they experience pressure to pursue a prescribed gendered academic identity [44]. As such, within academia, the distinct categorisation of masculine and feminine identities prescribes gendered expectations regarding academic role performance [21]. While an academic may be able to form an identity, the conditions under which they do so are inherently limited and restricted for all, and particularly so for women. These conditions have been proposed to manifest through the privileging of particular identities and ways of being, underpinned by coloniality, Eurocentrism, and the neoliberal episteme.

7. Academic ways of being, coloniality, and Eurocentrism

Particular ideologies can elucidate how specific identities, knowledge systems, and ways of being have manifested and are privileged in today's academic context. Underpinning the privileging of these elements is the process of coloniality, which is understood in critical terms to articulate human agency and choice, traditional, dominant values, and how power can be used in an exploitative sense [84]. Coloniality refers to structures and practices which are derived from settler colonialism and governance that continue to influence social relations and institutions in the present day, while deriving originally from historical practices and long-standing patterns of power [84, 85]. Coloniality is propagated through imperialism, which works to facilitate economic and cultural expansion, power, and control over societies [85]. This form of large-scale domination is successful based on the large disparity in power, as well as the securing and subjugating of the minority populations [87]. The historical role of coloniality in Australia has served three prominent functions: a reduction of the power of Indigenous nations, forcing the adoption and assimilation of a westernised way of thinking, and the perpetuation of narratives which serve to erase the identities of those not privileged within the way of knowing [88, 89].

Practices and policies from the motherland (i.e., the United Kingdom [UK]) prevented the traditional landowners and other minority groups from accessing power and resources [90, 91]. This power was held with the individuals from the UK who had taken the land from the traditional custodians (i.e., Aboriginal and Torres Strait Islander people, those from the First Nation), illustrating Aboriginal dispossession and colonial takeover, with the assumption that European culture and knowledge was superior to all others, and that the Europeans could define the world in their own terms [90, 91]. While some forms of colonialism aim to take resources to place the colonising country at an advantage, the objective of the coloniser upon possession of Australian land extended on this to include the acquisition of land to permanently settle [92]. Through this process of settling, the most destructive impacts to Indigenous communities were noted, where the exploitation of human and natural resources, as well as the acquisition, control,

and definition of these resources and the land, was identified [93]. The process outlined here was accomplished through the genocide, forced removal, and assimilation of Indigenous peoples within colonised land. The colonial defining of land and knowledge devalued the position of Aboriginal and Torres Strait Islander people; as such, the majority were killed through genocide (random killings, punitive expeditions, and organised massacres) [90, 91]. The colonisers forcibly removed any traces of Australian Indigenous peoples from their homes, placing them in schools with westernised education to remove all traces of their Indigenous identity [90, 91]. Punishment was implemented when Indigenous peoples spoke their language, and the working conditions were inhumane with no payment, or ability to communicate with others [93].

The superiority of the majority was validated through beliefs, ideas, and values embedded in social representations [90, 91]. This led to the European colonists ensuring that they, and their higher education institutions, benefitted from forms of colonial capitalism, as well as having their ideas and beliefs validated as the norm [92]. This was considered as a means of cultural violence, an aspect of the culture that legitimises violence through direct and structural forms, to privilege the Eurocentric value of a single knowledge and form of education [94]. Coloniality is also underpinned by institutionalised, and cultural racism. Institutionalised racism is where organisational practices and policies prevent members of oppressed groups from accessing power and resources, whereas cultural racism is where particular beliefs, ideas, and values embedded in social representations validate the superiority of one group over the other [90, 91]. The colonisers developed theories of popularised discourses through structural and cultural racism that reinforced support for their colonial endeavours [88, 89]. Through the colonisers' perspective, this legitimised the oppression, dispossession, and domination of the colonised subjects on the basis of intellectual and ethical grounds [88, 89]. European colonists, through their actions, combined these forms of racism to ensure their ethnic group was the primary beneficiary of colonial capitalism, which lead to a dominant culture in Australia titled 'western' [85, 95].

7.1 Constructing the Western, Eurocentric University

Coloniality is based on European origins and worldviews which are upheld and work to intentionally replace other knowledge systems, which then dominate society [85]. In academia, knowledge and science have been influenced by cultural racism to assume universality over particular worldviews, with the European scientific paradigm introduced during colonisation as the only valid system of academic knowledge [90]. The university context was the site in which the colonial matrix of knowledge was developed, which were categories of thought, and epistemic ways of knowing and being, that were developed by the coloniser, within their subsequent privileged languages [88, 89]. The colonial matrix of knowledge attacked and marginalised any form of knowledge that did not fit into the colonised ontological and epistemic framework [88, 89]. Foundational knowledge within the westernised higher education context is based on epistemic racism, with the genocide of people and knowledge underpinned by not only material aspects of colonialism, but how the Eurocentric ways of knowing, and being in the world replaced other forms of knowledge [96]. Through the validation of the European scientific paradigm, it is argued that a mono-cultural, universal western tradition of Eurocentrism is promoted, whereby the Eurocentric universal truth is accepted, and other forms of knowledge

and dissemination are invalidated [95]. Eurocentrism reflects the societal values and beliefs which were validated and constructed a dominant culture of western to disseminate the only valid system of knowledge at the time [90, 97]. The universality of the western worldview was based on European origins, which were upheld and worked to intentionally replace other knowledge systems, which then dominated society [85]. The Eurocentric, western worldview privileged white males as the majority, which impacted how white women, Aboriginal and Torres Strait Islander peoples, women with caring responsibilities, and other minorities were constructed and positioned in society [98]. The western tradition of Eurocentrism was promoted, whereby the Eurocentric universal truth was accepted, and other forms of knowledge and dissemination were invalidated [95]. Knowledge that is gained from the First World (the United States, and later, the UK) was disseminated in a one-way stream that privileges and promotes European and American academic cultural, and patriarchal imperialism [90].

7.2 The influence of coloniality on higher education

Higher education institutions have been influenced by particular ways of being and doing which reflect and preserve the dominant European colonial systems and practices [72]. The institutions were established upon the epistemic and material histories of coloniality, with universities across Australia, influenced by the British, providing education to the colonisers with the knowledge of those they would rule over [99]. This was achieved in such a manner that the expanding of colonial knowledge was viewed as dominating in nature, where the university was viewed as a context which was built and financed by dispossession, enslavement, coloniality, genocide, and constructed as a setting where colonial knowledge could be developed and extended outward [88, 89]. The knowledge privileged by coloniality built upon the subjectivities of a specific social agent (i.e., white, Christian, British men), which served to privilege other identities who did not meet these dimensions of identity [98]. It has been summarised that:

> *Education, like the institutions and societies it derives from, is neither culturally neutral nor fair. Education has its roots in a patriarchal, Eurocentric society, complicit with multiple forms of oppression of women, sometimes men, children, minorities, and Indigenous peoples [88].*

As such, the Australian public higher education institutions within the colonised society represented a crucial site for negotiating between the domination of coloniality, and Indigenous sovereignty [100]. Concerns surrounding the relationship between colonial control and power have been suggested, with it argued that:

> *Colonial includes all forms of dominating and oppressive relationships that emerge from structures of power and privilege inherent and embedded in our contemporary social relations…colonial is not defined simply as foreign or alien, but more importantly, as dominating and opposing [101].*

Through colonisation, the control of political, economic, and symbolic systems become institutionalised and obscured by ideologies that work to justify exploitative uses of power [72, 84]. This allows for the superiority of the coloniser, and the inferiority of the colonised, to manifest [84]. The continuing form of coloniality and

imperialism works to perpetuate privileged ways of being in academia, for example, academia operates as a patriarchal, exclusionary, elitist, imperial setting that privileges white, heterosexual men and their ways of being and doing as superior [87]. Members of the dominant group (i.e., white men) are privileged over others, such as women in academia, who then find themselves in a devalued position and treated in a less favourable way [85]. As such, other identities who differ from the dominant patriarchal practices and ways of being, such as women and minoritised groups, are constructed in this colonised, imperialist setting as inferior [87]. Further, the ways in which academic knowledge is structured, as well as the governing organisational structures of higher education are fundamentally imperialist and colonial [85]. The culture of academia and the systems of management and governance all work in ways which protect the privileges that are already set-in place, which then disadvantage women academics [102].

Education has been viewed as the perfect vehicle in the domination of coloniality [88]. Colonialism within Australia was only considered the beginning, and given the enormity of the process, it was expected to live on as an unconscious aspect of daily life, specifically, through education [88]. Given this, it is important to make conscious how entrenched and ongoing the colonial process is within the education context. As such, a key component of this consciousness raising is for all individuals to recognise how we are implicated in colonial practices [89]. Most are unaware of this because of how normalised colonial ideologies are in both educational, and everyday contexts [89]. The normalisation exists based on the education of individuals through pedagogical and research practices [89].

The culture of academia can be suggested as never having engendered a sense of security for women. Historically, the setting has illustrated its inegalitarian and hierarchical structure, to facilitate a setting that fosters exclusion, elitism, and inequalities [85, 102]. As a setting, it acts to marginalise many from the security of the centre, or ivory tower, where many wider social inequities (based on gender, social class, race, and ethnicity) are reflected and reinforced through traditional practices [85, 102]. Considering these inequalities, as well as the social and psychological mechanisms of colonisation and imperialism, the relationship of domination and control becomes more pervasive over generations [103]. As such, higher education to this day continues in playing its part in perpetuating colonising, imperialist, and globalising practices, alongside the mass media and other westernised institutions [102]. Definitions of reality can be made to prevail over others, for example, using power underpinning a psychological imperialism through laws, rituals, instructions, and other forces [87]. The neoliberal episteme is one such example of particular guidelines that govern the academics in terms of their ways of being and doing in academia [60]. As such, academic institutions appear to focus less on how individuals can challenge Eurocentric norms and practices, and more on how they can assimilate and adjust to these forms of capitalist modernisation and culture [87, 90]. Discussion of the capitalist modernisation in the academic culture relies on exploring how the neoliberal episteme privileges particular academic identities and ways of being.

8. Neoliberalism

Neoliberalism is an ideology that reflects an increased level of productivity through the marketisation of institutions, as well as exhibiting a set of economic policies that have, over time, become embedded within western culture [104].

Neoliberalism, as an episteme, reflects a way of knowing that can be present within the academic way of being [82]. Berry [75] describes neoliberalism as knowledge structures of rationalist scientism, empiricism, and productivity, quantified in a hard-and-fast manner that values efficiency and standardisation, as well as arguing that the dominant knowledge system can be indistinguishable from the neoliberal agenda that facilitates it. Further, neoliberalism has been associated with a positivist epistemology, and that the way of knowing, reflective in the episteme, values "externally defined rules and evaluative criteria, utility, and value for money, as well as scientific excellence" [105]. Institutions, under the neoliberal episteme, are governed to produce employable and local workers, or subjects, to supply services that are managed through neoliberal economic strategies [61].

The nature of work, and the workplace, within higher education has changed dramatically over the past two decades as a result of those in a position of power, as well as through the processes of globalisation and neoliberalism [106, 107]. Changes in the dominant socio-economic ideology within Australian tertiary education systems have transformed 'traditional' academic settings [108]. These changes have included a shift from a liberal setting that was characterised by a negotiated, flat, collegial governance structure, with professional autonomy valued, and the freedom for academics to define their role, to a more competitive, dominated, and hierarchical neoliberal structure, where the rights of academics are dependent on the market [108]. The shift has been strongly influenced by the manifestation of the neoliberal episteme. Many definitions of neoliberalism have been offered in the extant literature base, particularly in the social sciences literature, but most have commonalities that can be drawn upon [72].

The first evidence of neoliberalism was identified in the 1960s, although some argue that the episteme manifested and was evident in society earlier than this [106]. As an ideology, neoliberalism acknowledges the value of economic markets, both in their existence, and their operation [106]. The operation of the market-like structure within the institution acts as a guide for human action, capable of replacing any existing ideological beliefs that guide the individual's way of being and knowing, focusing on what is valued by the institution instead [109]. Institutions guided by the neoliberal episteme advocate for economic growth and view it as fundamental for the successful operation of society [109]. In combination, neoliberalism can encompass a range of economic, political, and social practices and ideas which functions at both an individual and institutional level [106].

8.1 The impact of neoliberalism on Australian public higher education

Within the higher education context, neoliberalism has changed ideas around teaching, research, and service. Neoliberalism is a change into the free market; a shift from educating students within professions to a focus on building marketable skills and knowledge within research [110]. The restructuring of universities has changed the expectations held for academics, for example, in how they provide services to the institution. Some suggest there is increasing pressure to be productive within the working environment [111] and these expectations are perceived by academics as near impossible to achieve [112]. Further, there appears an implicit expectation that the research interests of academics will benefit the interests of the schools, faculties, and institutions, with the importance of meeting targets that benefit the institution, rather than conducting research that the academic themselves enjoys, or finds pleasure in conducting [108]. In context of these pressures, higher education is a setting

where decision making capacity and personal autonomy may be limited [44]. In this new context, the focus is on generating capital and revenue [41], and measuring performance based on targets of research outputs and marketable skills [110].

Neoliberal ideas have changed the role of the academic in terms of the standards of how knowledge is gained, valued, and measured, for example, academics are viewed as now providing a service to their students, or 'clients' [113]. The impact of neoliberalism on higher education institutions has been summarised: "...neoliberalism brought various forms of external regulation, a new phenomenon for many institutions, and a greatly enhanced burden for others. Such large changes have had a strong influence on academics' beliefs and practices" [114]. The polarities, tensions, contrasts, and complementarities that are seen and felt by academics (and distinguished by neoliberalism) have impacted academia from both a local and global perspective [115]. Neoliberalism has reconceptualised the era that individuals live in, in that the knowledge that is produced is linked with economic outputs [107]. What this means is that advancements in knowledge are made within numerous institutional sites and research communities, simply, that knowledge does not come from one place, or from one person [104]. The individual or system who creates knowledge, or at least, has the ability to create knowledge, is situated within a position of power. Those with more power are constructed as experts within neoliberal systems, crafted with the responsibility to construct knowledge, subjectify certain individuals and ways of being and knowing, and allocate them hierarchical social positions [107]. As such, the individuals, the knowledge, and the systems are governed, both by the self and by external systems of control [106].

As institutions strive for competitive advantage in the marketplace, new features have been designed to be able to minimise costs and maximise profits. In relation to academic settings:

- While women academics' participation has increased within the institution, this is often through low-paid, casual, fixed-term, or part-time contracts [110, 112].

- Managerialist strategies and bureaucratic organisation are used to gain a firmer control over academics and their practices [110, 112].

- The increase in working hours has led to the blurring of boundaries between leisure, family, and work [110, 112].

- An increase in emphasising some forms of flexibility and lifelong learning, ironically, has reduced the emphasis on career continuity and progression, as well as the availability of secure employment contracts [110, 112].

Further, with the influence of the neoliberal ideology, related ideals such as individual enterprise, maximised efficiency, responsiveness to user needs, and cost effectiveness have filtered into institutions globally [114]. Higher education institutions are not exempt from this, with evidence illustrating an increased emphasis on measured outputs, performance indicators, higher index scores (relating to academic productivity) and grant income [113]. Consequently, these new behaviours and ideals that are characteristic of the free market have exchanged the traditional culture of open intellectual enquiry with the new culture of performativity [44]. To have agency surrounding the choice of research and inquiry, has now been replaced with academics having to conduct research that meets performance targets for the institution, which may involve conducting research that does not fit with the research area of the academic [44, 113].

These issues are of particular significance regarding the potential impact of the gendered academic environment on the experiences of women, and how they can create tensions for women academics. These tensions and inequalities are experienced more strongly by women, as the structure of academia embraces a patriarchal culture in combination to the neoliberal ideology. As such, academia now promotes the fully committed, visible, and self-promoting worker who is unaffected by familial responsibilities as the ideal worker [21, 47]. Additionally, the structure of higher education institutions simultaneously reinforces ideal worker standards that are masculinised in nature, as well as framing progression and advancement as merit-based and gender-neutral, which act to both perpetuate and intensify existing gendered inequalities [61]. Consequently, the patriarchal and neoliberal system impacts women whereby their career progression is intermittent and slower, compared to their male counterparts, but accompanied with more physical and psychological exhaustion, based on their multiple roles and responsibilities [106].

8.2 How did neoliberal ways of being become embedded in academia?

The neoliberal practices that stem from the episteme work to allow particular ways of being to function. Additionally, they can illuminate how certain discourses and ideologies are enacted and perpetuated. In the context of neoliberal academia, the ways of being that are constructed can be viewed as practices that allow the normative conditions of academia to exist. For example, neoliberalism can produce in individuals: higher levels of flexibility, cooperation, and productivity with the constructing of economic objectives that allow for the economic benefit of the institution [116]. Further, neoliberalism allows for the review of academics and their performance, whether the individuals are meeting the requirements of the system, as well as conceptualising the value of the academic to the system [117]. These can be considered as simultaneously good for some, and bad for other academics. Neoliberal ways of being in academia include an oppressing of creativity in teaching practices and criticality in research, the generation and demand for competition, as well as marginalisation and suppression of critical thinking [82]. Further to this, the masculination of the academy perpetuates the technologies of competition, individualism, and appropriation being performed in the self, which at times may conflict with other ways of being constructed by the academic [72].

The neoliberal episteme is viewed as powerful and insidious in that it can shape the subjectivities for all academics, irrespective of gender, age, or career stage [118]. While the neoliberal discourse can be viewed as "monstrous and absurd", for example, through the valuing of intellectual work in dollar terms [116], the superficial set of governing practices outlined thus far are not directly intended to enter and change the identities of academic workers, or to undermine their passion for, and commitment to their work [119]. Rather, neoliberal ways of being are rationalised by working to improve and enhance the practices of individuals to make them more useful and relevant to the system [109]. Individuals are viewed as subjects and products of the neoliberal system, reconstructed to be part of a whole ensemble directed and focused to the pursuit and interests of the system [120]. As such, a subject's academic identities and sense of self is reconstructed over time to reflect the ethos and structure of the neoliberal episteme, and all aspects of social behaviour can now be reconceptualised from an economic lens [121]. It has been suggested that:

> *rather than govern by dictating rights and responsibilities, neoliberalism proceeds by harnessing desires for independence and creativity to the interests of business,*

> *reconfiguring workers as entrepreneurs of their own skills and abilities and reconfiguring the social relations of capitalism to emphasise competition, not between workers and capitalists, but between workers themselves [122].*

Within western society, academics now work within a dramatically different educational system and context from what has existed years ago [106]. Neoliberalism has brought differing forms of external regulation, which has constructed a new phenomenon for institutions, but poses more of a burden for other academics [104]. These burdens and challenges have been suggested to influence the academics' identities, beliefs, and actions [117]. Academics, when reflecting on their identities, can be forced to review and work on themselves, in terms of self-surveillance, conduct, discipline, and self-restraint. The techniques of government and governmentality work to impose the social personality of the individual, whereby the academic's freedom is engaged to display desirable ways of behaving [120]. In the context of neoliberalism, the behaviour is to become tolerable and productive in relation to the labour market and capitalist ideals [105]. The real political task within society is when critiquing these practices, one must critique the workings of the institution and how they influence the conceptualisation of one's identities. The neoliberal workings of the institution can appear to be both independent and neutral; forms of discipline and conduct which have always obscurely exercised itself [120]. Individuals can work to fight fear and fight the insidiousness of the neoliberal episteme which have been legitimised by the ways of being of the institution. As such, research that explores the experiences of academics and aims to deconstruct these working practices, can assist in developing an understanding of the academic identity and overall understanding of the academic way of being. It is important to elucidate discourse surrounding the academic way of being, to be able to make sense of how neoliberalism, as a difficult and intangible ideology, works and manifests through the experiences of academics [104].

9. Conclusions

This chapter summarised the current state of women's positioning within higher education, setting the scene by providing an exploration of what is known thus far surrounding academic identities, the gender binary, heteronormativity, intersectionality, and how coloniality has influenced academia. The chapter concluded with an exploration of how neoliberalism has been conceptualised in the Australian public higher education setting.

Conflict of interest

The author declares no conflict of interest.

DOI: http://dx.doi.org/10.5772/intechopen.108503

Author details

Matthew James Phillips
Curtin University, Perth, WA, Australia

*Address all correspondence to: matthew.phillips@curtin.edu.au

References

[1] Bomert C, Leinfellner S. Images, ideals, and constraints in times of neoliberal transformations: Reproduction and profession as conflicting or complementary spheres in academia? European Educational Research Journal. 2017;**16**:106-122. DOI: 10.1177/1474904116682972

[2] Read B, Leathwood C. Tomorrow's a mystery: Constructions of the future and 'un/becoming' amongst 'early' and 'late' career academics. International Studies in Sociology of Education. 2018;**27**:333-351. DOI: 10.1080/09620214.2018.1453307

[3] Blackburn H. The status of women in STEM in higher education: A review of the literature 2007-2017. Science & Technology Libraries. 2017;**36**:235-273. DOI: 10.1080/0194262X.2017.1371658

[4] West C, Zimmerman DH. Doing gender. Gender & Society. 1987;**1**:125-151. https://www.jstor.org/stable/189945?seq=1

[5] Acker J. Hierarchies, jobs, bodies: A theory of gendered organisations. Gender & Society. 1990;**4**:139-158. DOI: 10.1177/089124390004002002

[6] Williams J. From difference to dominance to domesticity: Care as work, gender as tradition. Chicago-Kent Law Review. 2000;**76**:1441-1494. https://scholarship.kentlaw.iit.edu/cklawreview/vol76/iss3/4/

[7] Göktürka S, Tülübaş T. Survival of the fittest: women's academic experiences of navigating neoliberal expectations in Turkish universities. Gender and Education. 2021;**33**:267-284. DOI: 10.1080/09540253.2020.1735311

[8] Cumings Mansfield K, Welton AD, Grogan M. "Truth or consequences": A feminist critical policy analysis of the STEM crisis. International Journal of Qualitative Studies in Education. 2014;**27**:1155-1182. DOI: 10.1080/09518398.2014.916006

[9] Morgenroth T, Gustafsson Senden M, Lindqvist A, Renstrom EA, Ryan MK, Morton TA. Defending the sex/gender binary: The role of gender identification and need for closure. Social Psychological and Personality Science. 2021;**12**:731-740. DOI: 10.1177/1948550620937188

[10] Tilsen J, Nylund D, Grieves L. The gender binary: Theory and lived experience. The International Journal of Narrative Therapy and Community Work. 2007;**3**:47-54. DOI: 10.3316/informit.060098000111850

[11] Aboim S. Gender in a box? The paradoxes of recognition beyond the gender binary. Politics and Governance. 2020;**8**:231-241. DOI: 10.17645/pag.v8i3.2820

[12] Butler J. Gender Trouble: Feminism and the Subversion of Identity. 3rd ed. Oxfordshire, UK: Routledge; 2002

[13] Butler J. Undoing gender. 1st ed. Oxfordshire, UK: Routledge; 2004

[14] Saguy T, Reifen-Tagar M, Joel D. The gender-binary cycle: The perpetual relations between a biological-essentialist view of gender, gender ideology, and gender-labelling and sorting. Philosophical Transactions Royal Society B. 2021;**376**:20200141. DOI: 10.1098/rstb.2020.0141

[15] Yang X, Naas R, Dunham Y. Testing the limits of structural thinking about gender. Developmental Science. 2021:e13169. DOI: 10.1111/desc.13169

[16] Robinson BA. Heteronormativity and homonormativity. In: Naples NA, editor. The Wiley Blackwell Encyclopedia of Gender and Sexuality Studies. 1st ed. Chichester: Wiley Blackwell; 2016. pp. 1-3. DOI: 10.1002/9781118663219.wbegss013

[17] Smith A. Queer theory and native studies: The heteronormativity of settler colonialism. GLQ: A Journal of Lesbian and Gay Studies. 2010;**16**:42-68. https://muse.jhu.edu/article/372444

[18] Herz M, Johansson T. The normativity of the concept of heteronormativity. Journal of Homosexuality. 2015;**62**:1009-1020. DOI: 10.1080/00918369.2015.1021631

[19] Philipsen M, Case S, Oetama-Paul A, Sugiyama K. Academic womanhood across career stages: A work-in-life perspective on what was, is, and could be. Community, Work, & Family. 2017;**20**:623-644. DOI: 10.1080/13668803.2017.1378619

[20] Quiddington P. The new politics of Australian higher education: Why universities get rumbled in the budget. Higher Education Research & Development. 2010;**29**:475-487. DOI: 10.1080/07294361003601867

[21] Williams JC, Phillips KW, Hall EV. Double Jeopardy? Gender Bias against Women of Colour in Science [Internet]. 2015. Available from: http://www.uchastings.edu/news/articles/2015/01/double-jeopardy-report.pdf. [Accessed: September 13, 2022]

[22] Rice C, Harrison E, Friedman M. Doing justice to intersectionality in research. Cultural Studies Critical Methodologies. 2019;**19**:409-420. DOI: 10.1177/1532708619829779

[23] Crenshaw K. Demarginalizing the intersection of race and sex: A black feminist critique of antidiscrimination doctrine, feminist theory and antiracist politics. University of Chicago Legal Forum. 1989;**1**:139-167. http://chicagounbound.uchicago.edu/uclf/vol1989/iss1/8

[24] Gopaldas A. Intersectionality 101. Journal of Public Policy & Marketing. 2013;**32**:90-94. DOI: 10.1509/JPPM.12.044

[25] Cole ER. Intersectionality and research in psychology. American Psychologist. 2009;**64**:170-180. DOI: 10.1037/a0014564

[26] Harris JC, Patton LD. Un/doing intersectionality through higher education research. The Journal of Higher Education. 2018;**80**:1-27. DOI: 10.1080/00221546.2018.1536936

[27] Eagly AH, Miller DI. Scientific eminence: Where are the women? Perspectives on Psychological Science. 2016;**11**:899-904. DOI: 10.1177/1745691616663918

[28] Stark C, Cantano V, Storm C, Gurevich M. Psychological climate changes for women in academic psychology: Forecasts, sources, and implications. Psychologie Canadienne. 2001;**42**:286-300. DOI: 10.1037/h0086897

[29] Fairweather J. Linking evidence and promising practices in science, technology, engineering, and mathematics (STEM) undergraduate education. Paper for the National Academies National Research Council Board of Science Education. 2009:1-31. Available from: https://www.nsf.gov/attachments/117803/public/Xc--Linking_Evidence--Fairweather.pdf

[30] Parsons E, Priola V. Agents for change and changed agents: The micro-politics of change and feminism

in the academy. Gender, Work and Organisation. 2013;**20**:580-598. DOI: 10.1111/j.1468-0432.2012.00605.x

[31] Webster J. Women Academics: Tensions between the Workplace and the Personal and Professional Selves [Thesis]. Palmerston North: Massey University; 2010. https://mro.massey.ac.nz/handle/10179/1799

[32] O'Brien KR, Hapgood KP. The academic jungle: Ecosystem modelling reveals why women are driven out of research. OIKOS: Synthesising. Ecology. 2012;**121**:999-1004. DOI: 10.1111/j.1600-0706.2012.20601.x

[33] Gasser CE, Shaffer KS. Career development of women in academia: Traversing the leaky pipeline. The Professional Counsellor. 2014;**4**:332-352. DOI: 10.15241/ceg.4.4.332

[34] Science in Australian Gender Equity. What is SAGE? [Internet]. 2020. Available from: https://www.sciencegenderequity.org.au/about/what-is-sage/. [Accessed: September 13, 2022]

[35] Westring AM, McDonald JA, Carr PA, Grisso JA. An integrated framework for gender equity in academic medicine. Academic Medicine. 2016;**91**:1041-1044. DOI: 10.1097/ACM.0000000000001275

[36] Fagan C, Teasdale N. Women professors across STEMM and non-STEMM disciplines: Navigating gendered spaces and playing the academic game. Work, Employment, and Society. 2021;**35**:774-792. DOI: 10.1177/0950017020916182

[37] Khan T, Siriwardhane P. Barriers to career progression in the higher education sector: Perceptions of Australian academics. Sustainability. 2021;**13**:6255-6274. DOI: 10.3390/su13116255

[38] Green W, Myatt P. Telling tales: A narrative research study of the experiences of new international academic staff at an Australian university. International Journal for Academic Development. 2011;**16**:33-44. DOI: 10.1080/1360144X.2011.546219

[39] Reybold LE, Alamia JJ. Academic transitions in education: A developmental perspective of women faculty experiences. Journal of Career Development. 2008;**35**:107-128. DOI: 10.1177/0894845308325644

[40] Kachchaf R, Ko L, Hodari A, Ong M. Career-life balance for women of colour: Experiences in science and engineering academia. Journal of Diversity in Higher Education. 2015;**8**:175-191. DOI: 10.1037/a0039068

[41] Saunders D. The impact of neoliberalism on college students. Journal of College and Character. 2007;**8**:1-9. DOI: 10.2202/1940-1639.1620

[42] Bryson J, Wilson J, Plimmer G, Blumenfeld S, Donnelly N, Ku B, et al. Women workers: Caring, sharing, enjoying their work—Or just another gender stereotype? Labour & Industry: A Journal of the Social and Economic Relations of Work. 2014;**24**:258-271. DOI: 10.1080/10301763.2014.978965

[43] Moss-Racusin CA, Molenda AK, Cramer CR. Can evidence impact attitudes? Public reactions to evidence of gender bias in STEM fields. Psychology of Women Quarterly. 2015;**39**:194-209. DOI: 10.1177/0361684314565777

[44] Thompson BM. Succumbing, surviving, succeeding? Women managers in academia. Gender in Management. 2015;**30**:397-413. DOI: 10.1108/GM-08-2013-0095

[45] Denmark FL, Williams DA. The older women as sage: The satisfaction

of mentoring. Women and Therapy. 2012;**35**:261-278. DOI: 10.1080/02703149.2012.684543

[46] Fox CO. Neither bitch nor mother: Queering safety in the classroom. The Social Studies. 2013;**9**:64-83. DOI: 10.18740/S4V88D

[47] Macoun A, Miller D. Surviving (and thriving) in academia: Feminist support networks and women ECRs. Journal of Gender Studies. 2014;**23**:287-301. DOI: 10.1080/09589236.2014.909718

[48] Knights D, Clarke CA. It's a bittersweet symphony, this life: Fragile academic selves and insecure identities at work. Organisation Studies. 2014;**35**:335-357. DOI: 10.1177/0170840613508396

[49] Dubois-Shaik F, Fusulier B. Understanding gender inequality and the role of the work/family interface in contemporary academia: An introduction. European Educational Research Journal. 2017;**16**:99-105. DOI: 10.1177/1474904117701143

[50] Foschi M. Double standards for competence: Theory and research. Annual Review of Sociology. 2000;**26**:21-42. DOI: 10.0732-0582/00/0815-0021

[51] Nash M, Moore M. 'I was completely oblivious to gender': An exploration of how women in STEMM navigate leadership in a neoliberal, post-feminist context. Journal of Gender Studies. 2019;**1**:1-14. DOI: 10.1080/09589236.2018.1504758

[52] O'Connell C, McKinnon M. Perceptions of barriers to career progression for academic women in STEM. Societies. 2021;**11**:27-47. DOI: 10.3390/soc11020027

[53] Nash M, Grant R, Lee L, Martinez-Marrades A, Winzenberg T. An exploration of perceptions of gender equity among SAGE Athena SWAN self-assessment team members in a regional Australian university. Higher Education Research & Development. 2021;**40**:356-369. DOI: 10.1080/07294360.2020.1737657

[54] Howe-Walsh L, Turnbull S. Barriers to women leaders in academia: Tales from science and technology. Studies in Higher Education. 2016;**41**:415-428. DOI: 10.1080/03075079.2014.929102

[55] Vohlidalova M. Early-career women academics: Between neoliberalism and gender conservatism. Sociological Research Online. 2021;**26**:27-43. DOI: 10.1177/1360780420914468

[56] Bozzon R, Murgia A, Poggio B, Rapetti E. Work–life interferences in the early stages of academic careers: The case of precarious researchers in Italy. European Educational Research Journal. 2017;**16**:332-351. DOI: 10.1177/1474904116669364

[57] Arredondo P, Miville ML, Capodilupo CM, Vera T. Women and the Challenge of STEM Professions. 1st ed. New York City, New York: Springer; 2022. DOI: 10.1007/978-3-030-62201-5_3

[58] Gaudet S, Marchand I, Bujaki M, Bourgeault IL. Women and gender equity in academia through the conceptual lens of care. Journal of Gender Studies. 2022;**31**:74-86. DOI: 10.1080/09589236.2021.1944848

[59] Eslen-Ziya H, Yildirim TM. Perceptions of gendered challenges in academia: How women academics see gender hierarchies as barriers to achievement. Gender, Work and Organisation. 2022;**29**:301-308. DOI: 10.1111/gwao.12744

[60] Peck J, Brenner N, Theodore N. Actually existing neoliberalism. In:

Cahill D, Cooper M, Konings M, Primrose D, editors. The Sage Handbook of Neoliberalism. 1st ed. Newbury Park, California: Sage Publications; 2018. pp. 3-15

[61] Clegg S. Academic identities under threat? British Education Research Journal. 2008;**34**:329-345. DOI: 10.1080/01411920701532269

[62] Weedon C. Feminist Practice and Poststructuralist Theory. 2nd ed. Hoboken, New Jersey: Blackwell Publishers; 1997

[63] Lazar MM. Politicizing gender in discourse: Feminist critical discourse analysis as political perspective and praxis. In: Lazar MM, editor. Feminist Critical Discourse Analysis. 1st ed. London, UK: Palgrave McMillan Ltd; 2005. pp. 1-28

[64] Pick D, Symons C, Teo STT. Chronotopes and timespace contexts: Academic identity work revealed in narrative fiction. Studies in Higher Education. 2017;**42**:1174-1193. DOI: 10.1080/03075079.2015.1085008

[65] Drame E, Mueller J, Oxford R, Toro S, Wisneski D, Xu Y. 'We make the road by walking': A collaborative inquiry into the experiences of women in academia. Reflective Practice. 2012;**13**:829-841. DOI: 10.1080/14623943.2012.732939

[66] Walsh RJ. XI. 'Objectivity' and intersectionality: How intersectional feminism could utilise identity and experience as a dialectical weapon of liberation within academia. Feminism and Psychology. 2015;**25**:61-66. DOI: 10.1177/0959353514562807

[67] Akin-Little A, Bray MA, Eckert TL, Kehle TJ. The perceptions of academic women in school psychology: A national survey. School Psychology Quarterly. 2004;**19**:327-341. DOI: 10.1521/scpq.19.4.327.53504

[68] Baker SM. Success for women in academia: Choices, experiences, and challenges. Annals of the New York Academy of Sciences. 1999;**869**:210-218. DOI: 10.1111/j.1749-6632.1999.tb08378.x

[69] Rainnie A, Goods C, Bahn S, Burgess J. The challenges of working in Australian academia: An introduction. Labour and Industry. 2013;**23**:191-199. DOI: 10.1080/10301763.2013.839080

[70] Marginson S. Australia. In: Forest JJJ, Altbach PG, editors. International Handbook of Higher Education. 2nd ed. New York City, New York: Springer; 2007

[71] Bennett R, Hobson J, Jones A, Martin-Lynch P, Scutt C, Strehlow K, et al. Being chimaera: A monstrous identity for SoTL academics. Higher Education Research & Development. 2016;**35**:217-228. DOI: 10.1080/07294360.2015.1087473

[72] Adam R. Conceptualising the epistemic dimension of academic identity in an age of neoliberalism. Education Research and Perspectives. 2012;**39**:70-89. https://search-proquest-com.dbgw.lis.curtin.edu.au/docview/1153259381?pq-origsite=primo

[73] Alwazzan L, Rees C. Women in medical education: Views and experiences from the Kingdom of Saudi Arabia. Medical Education. 2016;**50**:852-865. DOI: 10.1111/medu.12988

[74] Yaacoub H. Professional identities of part-time academics. International Journal of Arts & Sciences. 2011;**4**:223-252. DOI: 10.80/938069924.10382

[75] Berry M. Power/Knowledge in the Information Age: The

Epistemological Implications of ICTs and Education for all [Internet]. 2008. Available from: http://web.uvic.ca/~literacy/UVic%20Language%20and%20Literacy%202008%20Conference%20Proceedings/9.%20Power-Knowledge%20in%20the%20Information%20Age%20-%20The%20Epistemological%20Implications%20of%20ICTS%20and%20Education%20for%20All.pdf. [Accessed: September 16, 2022]

[76] Galton M, MacBeath J. Teachers under pressure. 1st ed. Newcastle upon Tyne, UK: SAGE/National Union of Teachers; 2008

[77] Alcorn A. The important things. In: Engvall PR, editor. Academic Identity: Place, Race, and Gender in Academia. 1st ed. New York, New York: Hampton Press; 2003. p. 22

[78] Australian Council of Learned Academies. Career support for researchers: Understanding needs and developing a best practice approach [Internet]. 2012. Available from: http://www.tossgascoigne.com.au/docs/CareerSupportForResearchers.pdf. [Accessed: September 16, 2022]

[79] McAlpine L, Amundsen C, Turner G. Identity-trajectory: Reframing early-career academic experience. British Educational Research Journal. 2014;**40**:952-969. DOI: 10.1002/berj.3123

[80] Ward K, Wolf-Wendel L. Academic motherhood: Mid-career perspectives and the ideal worker norm. New directions for. Higher Education. 2016;**176**:11-23. DOI: 10.1002/he.20206

[81] Brown S, Ogilvie J, Stork D, Woodilla J. Making sense of late academic careers: Stories, images, and reflections. Organization Management Journal. 2014;**11**:273-287. DOI: 10.1080/15416518.2014.963835

[82] Archer L. The new neoliberal subjects? Young/er academics' constructions of professional identity. Journal of Education Policy. 2008;**23**:265-285. DOI: 10.1080/02680930701754047

[83] Connell RWW, Messerschmidt JW. Hegemonic masculinity: Rethinking the concept. Gender & Society. 2005;**19**:829-859. DOI: 10.1177/0891243205278639

[84] Fox D, Prilleltensky I, Austin S. Critical Psychology: An Introduction. 2nd ed. Newcastle upon Tyne, UK: Sage Publications; 2013

[85] Staeuble I. Psychology in the Eurocentric order of the social sciences: Colonial constitution, cultural imperialist expansion, postcolonial critique. In: Brock AC, editor. Internationalizing the History of Psychology. 1st ed. New York, New York: New York University Press; 2006. pp. 183-207

[86] Pomeroy C. Academia's gender problem. Scientific American. 2016;**314**:11. DOI: 10.1011/sa00368733

[87] Cupples J, Grosfoguel R. Unsettling Eurocentrism in the Westernized University. 1st ed. Oxfordshire, UK: Routledge; 2018

[88] Battiste M. Decolonizing Education: Nourishing the Learning Spirit. 1st ed. Saskatoon, Canada: Purich Publishing Limited; 2013

[89] Moreton-Robinson A. The white man's burden: Patriarchal white epistemic violence and Aboriginal women's knowledges within the academy. Australian Feminist Studies. 2011;**26**:413-431. DOI: 10.1080/08164649.2011.621175

[90] Howitt D, Owusu-Bempah J. The Racism of Psychology: Time for a Change. 1st ed. Hoboken, New Jersey: Harvester and Wheatsheaf; 1994

[91] Jones J. Prejudice and Racism. 2nd ed. New York, New York: McGraw-Hill; 1997

[92] Marginson S, Considine R. The Enterprise University: Power, Governance, and Reinvention in Australia. 1st ed. Cambridge, UK: Cambridge University Press; 2000

[93] Bodkin-Andrews G, Carlson B. The legacy of racism and indigenous Australian identity within education. Race Ethnicity and Education. 2016;**19**:784-807. DOI: 10.1080/13613324.2014.969224

[94] Galtung J. Cultural violence. Journal of Peace Research. 1990;**27**:291-305. DOI: 10.1177/0022343390027003005

[95] Mentan T. Unmasking Social Science Imperialism: Globalization Theory as a Phase of Academic Colonialism. 1st ed. Bamenda, Cameroon: Langaa RPCIG; 2015

[96] Grosfoguel R. Epistemic racism/sexism, westernized universities and the four genocides/epistemicides of the long 16th century. Human Architecture: Journal of the Sociology of Self-Knowledge. 2013;**11**:73-90. https://www.researchgate.net/publication/317505226_Epistemic_RacismSexism_Westernized_Universities_and_the_Four_GenocidesEpistemicides_of_the_Long_16th_Century

[97] Grimshaw P. Federation as a turning point in Australian history. Australian Historical Studies. 2002;**33**:25-41. DOI: 10.1080/10314610208596177

[98] Cammack JC, Phillips DK. Discourses and subjectivities of the gendered teacher. Gender and Education. 2002;**14**:123-133. DOI: 10.1080/09540250220133987

[99] Macoun A. Colonising white innocence: Complicity and critical encounters. In: Madison S, Clark T, de Costa R, editors. The Limits of Settler Colonial Reconciliation. 1st ed. New York City: Springer; 2016

[100] Moreton-Robinson A. Writing off Indigenous sovereignty: The discourse of security and patriarchal white sovereignty. In: Moreton-Robinson A, editor. Sovereign Subjects: Indigenous Sovereignty Matters. 1st ed. Allen & Unwin: Crows Ness, New South Wales; 2007. pp. 86-102

[101] Dei GJS, Asgharzadeh A. The power of social theory: The anti-colonial discursive framework. The Journal of Educational Thought. 2001;**35**:297-323. http://www.jstor.org/stable/23767242

[102] Smith L. Decolonizing Methodologies: Research and Indigenous Peoples. 1st ed. London, UK: Zed; 1999

[103] Moane G. Gender and Colonialism: A Psychological Analysis of Oppression and Liberation. 1st ed. London, UK: Palgrave Macmillan; 1999

[104] Adams G, Estrada-Villalta S, Sullivan D, Markus H. The psychology of neoliberalism and the neoliberalism of psychology. Journal of Social Issues. 2019;**75**:189-216. DOI: 10.1111/josi.12305

[105] Hunter M. Rethinking epistemology, methodology, and racism: Or is white sociology really dead? Race and Society. 2002;**5**:119-138. DOI: 10.1016/j.racsoc.2004.01.002

[106] Burke PJ. Gender, neoliberalism, and corporatised higher education. In: Niemi NS, Weaver-Hightower MB,

editors. The Wiley Handbook of Gender Equity in Higher Education. 1st ed. Hoboken, New Jersey: John Wiley & Sons Incorporated; 2020. pp. 69-90

[107] Cotoi C. Neoliberalism: A Foucauldian perspective. International Review of Social Research. 2011;**1**:109-124. DOI: 10.1515/irsr-2011-0014

[108] Dzidic PL, Castell EL, Roberts LD, Allen PJ, Quail M. Reflections on the emergence and evolution of a scholarship of teaching and learning community of practice within a research-intensive higher education context. In: McDonald J, Cater-Steel A, editors. Communities of Practice: Facilitating Social Learning in Higher Education. 1st ed. New York City, New York: Springer; 2016. pp. 219-239

[109] Connell R. The neoliberal cascade and education: An essay on the market agenda and its consequences. Critical Studies in Education. 2013;**54**:99-112. DOI: 10.1080/17508487.2013.776990

[110] Radice H. How we got here: UK higher education under neoliberalism. ACME: An International E-Journal for Critical Geographies. 2013;**12**:407-418. https://acme-journal.org/index.php/acme/article/view/969

[111] Fanghanel J. Being an Academic. 1st ed. Oxfordshire, UK: Routledge; 2012

[112] Brienza C. Degrees of (self-) exploitation: Learning to labour in the neoliberal university. Journal of Historical Sociology. 2016;**29**:92-111. DOI: 10.1111/johs.12119

[113] Zarkov D. On intellectual labour and neoliberalism in academia—Or, in praise of reviewers. European Journal of Women's Studies. 2015;**22**:269-273. DOI: 10.1177/1350506815591920

[114] Henkel M. Change and continuity in academic and professional identities. In: Gordon G, Whitchurch C, editors. Academic and Professional Identities in Higher Education: The Challenges of a Diversifying Workforce. 1st ed. Oxfordshire, UK: Routledge; 2010. pp. 3-12

[115] Cortes Santiago I, Karimi N, Alicea ZRA. Neoliberalism and higher education: A collective autoethnography of brown women teaching assistants. Gender and Education. 2017;**29**:48-65. DOI: 10.1080/09540253.2016.1197383

[116] Davies B, Petersen EB. Intellectual workers (un)doing neoliberal discourse. International Journal of Critical Psychology. 2005;**13**:32-54. https://www.researchgate.net/publication/281349246_Intellectual_workers_undoing_neoliberal_discourse/link/562e2e1908aef25a24441d73/download

[117] Morley L. Troubling intra-actions: Gender, neo-liberalism and research in the global academy. Journal of Education Policy. 2016;**31**:28-45. DOI: 10.1080/02680939.2015.1062919

[118] Navarro T. But some of us are broke: Race, gender, and the neoliberalisation of the academy. American Anthropologist. 2017;**119**:506-517. DOI: 10.1111/aman.12888

[119] Dickens D, Chavez E. Navigating the workplace: The costs and benefits of shifting identities at work among early-career U.S. black women. Sex Roles. 2018;**78**:760-774. DOI: 10.1007/s11199-017-0844-x

[120] Hartung C, Barnes N, Welch R, O'Flynn G, Uptin J, McMahon S. Beyond the academic precariat: A collective biography of poetic subjectivities in the neoliberal university. Sport, Education

and Society. 2017;**22**:40-57. DOI: 10.1080/13573322.2016.1202227

[121] Dugas D, Summers KH, Harris LN, Stich AE. Shrinking budgets, growing demands: Neoliberalism and academic identity tension at regional public universities. AERA Open. 2018;**4**:1-14. DOI: 10.1177/2332858418757736

[122] Foucault M. The Birth of Biopolitics: Lectures at the College de France, 1978-1979. 1st ed. London, UK: Palgrave Macmillan; 2008

Chapter 19

Perspective Chapter: Alumni Engagement in Higher Education Institutions – Perspectives from India

Parimala Veluvali and Jayesh Surisetti

Abstract

Engaging with alumni has become an institutional priority for many higher educational institutions. Alumni help in building the institutional brand and Universities are devising their own strategies for engagement with their alumni. In this pursuit, institutions also encounter certain challenges. Given the diversity in the institutional strategies toward alumni engagement, the challenges faced by them are also diverse. The purpose of this chapter is to study the key practices of higher education institutions in India in the area of alumni engagement and identify challenges faced by them in engaging with alumni, especially from a mid- to long-term perspective. The study has been done based on a purposive sample for institutions in India that have been graded high on quality assurance and sustenance by assessment and accreditation agencies such as NAAC and AACSB. The information available on the home pages of these institutions has been used for the purpose of the study. The study reveals certain key strategies and best practices that can be implemented by institutions for greater engagement. Involving the alumni in all aspects of the institutional functioning is the key to nurturing a healthy association.

Keywords: alumni engagement, institution building, brand building, alumni contribution, alumni engagement strategy, higher education

1. Introduction

Higher education institutions in India are exploring innovative and effective avenues for alumni engagement going much beyond the conventional routes. It is imperative to study these practices to enable public dissemination and knowledge sharing of best practices [1].

Alumni are an important factor in the success of higher education [2]. University alumni are key stakeholders and important contributors to the growth and development of their alma mater. How a higher education institution engages with its alumni

is increasingly becoming important, as alumni engagement is one of the essential indicators of quality assurance in education. Educational quality and stakeholder engagement are closely linked. Quality assessment and accreditation parameters recognize alumni engagement as an important criterion in assessing the quality of the institution.

Extant literature affirms the connection between alumni engagement and institution building. The cooperation between the university and its alumni facilitates the connection between the academic and the industry and serves as a precursor for an inclusive environment, facilitating the exchange of experiences and knowledge sharing. This, in turn, ensures that the quality of education is in sync with the industry needs [3]. A steady engagement with alumni is important for the strategic growth of higher education institutions [4]. Studies have documented that alumni with a stronger sense of belonging to their alma mater are more likely to give back to their alma mater [5].

2. Challenges

Alumni engagement strategies vary from institution to institution and as such the challenges faced by institutions would also vary. For the purpose of understanding, the challenges can be clubbed into three buckets: strategic, interactive, and technological. Certain challenges emerge because of the strategic implementation of alumni engagement activities. *Prima facie*, the key challenge is that most institutions do not see alumni engagement as a strategic initiative. Due to this, institutions often miss out on leveraging alumni in the truest sense.

2.1 Strategic

In terms of the strategic challenges faced by alumni engagement, there are three broad issues that emerge.

2.1.1 Defining alumni

Typically, alumni are seen as participants of flagship or full-time courses, and the outreach is limited to them. Since alumni are defined in a narrow sense, the efforts tend to exclude participants in short-term exchange programs, certification courses, and development programs, etc. These participants are often professionals or other educators, who carry a wide variety of in-depth experience. Including them in a separate class of alumni engagement activities can broaden the scope of the alumni network and enrich the audience as well.

2.1.2 Under-pressure budgets

Institutional budgets are under pressure, especially in a post-lockdown scenario. As a consequence, alumni relations budgets also suffer. Despite the intent, institutions are not able to engage alumni to the extent and in the manner, they would like to. To an extent, this also creates a reverse dependence of institutions on alumni and their financial contributions. Under-pressure budgets tend to make alumni engagement a lot more transactional in nature.

2.1.3 Lack of cohesiveness

Activities that are undertaken under the ambit of alumni engagement are often organized independently. This often leads to alumni engagement spreading thinly across multiple initiatives without a cohesive sense of direction. This may lead to duplication of efforts or duplication of bodies and entities as well. Some activities might even be organized independently by alumni themselves without the institution in the picture. This might hold well for informal gatherings; however, formal alumni engagement activities might face the brunt.

2.2 Interactive

There are three key challenges that alumni engagement faces when it comes to the interactions between alumni and the institution.

2.2.1 One-sided interactions

Institutions in most of their interactions tend to remain one-sided. Despite all the communication happening, there is an absence of a feedback mechanism to listen to and act upon alumni suggestions. In addition to this, the primary focus of alumni interactions is the dissemination of information — most of the communication is about what the current students are doing. This tends to give alumni the impression that the institution does not pay heed to their perspective. One of the most prominent reasons for this phenomenon is the absence of a technology platform. Be it through snap polls for succinct feedback or through discussion boards for detailed interactions, a technology platform can provide greater depth and make interactions two-sided.

2.2.2 Impersonal interactions

Most alumni communication is addressed to a bulk audience (one-to-many). The space for customized interactions is still unutilized. The topics tend to be general issues rather than addressing specific points of concern. The communication is typically supplemented by engagement events such as alumni meets. The *modus operandi* of these events is that of large gatherings, where interactions are typically between alumni themselves. This does not give a lot of focus on the interactions between alumni and the institution itself. The reinforcement of the sense of belongingness through informational and emotional connect is possible only through interactions that happen with and within the institution.

2.2.3 Non-value adding interactions

The alumni community has the potential to provide significant benefits to its members through various features; however, the current approach taken by the institutions to interact with these members is mainly focused on theoretical aspects and lacks incentives to motivate alumni to invest their time and resources in developing a relationship. This should be addressed in order to encourage alumni to take advantage of the tangible and immediate benefits offered by the alumni community. Jobs, internships, industry events, and self-interest groups — all these initiatives make alumni interactions much more relevant.

2.3 Technological

There are two major facets of technology that pose challenges to alumni interactions.

2.3.1 Legal and infrastructural challenges

Data integrity and IT security have emerged as obstacles to collecting, storing, and utilizing alumni information. Organizations that do not have policies for data collection and storage find it, especially difficult to maintain consistent communication.

2.3.2 Inefficient and outdated technology

Alumni associations and universities are facing a major challenge in the form of outdated technology and data. With approximately 50% of the email addresses on the record being undeliverable, many institutions are unable to extract meaningful information from their alumni database beyond basic contact and graduating class details. As a result, universities are forced to invest their scarce marketing resources in generic mail and email campaigns that often fail to generate any returns. These generic campaigns typically lead to an increase in opt-outs and unsubscribed, with no benefit to the university.

3. Recommendations

3.1 Define alumni personas

Alumni relations experts understand that one single audience cannot encompass all alumni. People have diverse beliefs, so their interests vary as well. The best practice for alumni relations is to define alumni personas. This can be done by considering alumni demographics, behaviors, and common interests, or a combination of all three. By understanding personas, alumni relations teams can better identify, which motivators and communicators will be effective for different alumni groups, making it easier to determine the best practices for a large audience.

3.2 Keep engagement "light touch" but relevant

Begin your outreach to alumni by using soft and gentle communication that links them to your institution without asking for a major commitment. Additionally, provide sufficient opportunities for alumni to stay in touch with you, such as social media platforms, newsletters, and events, in order to keep them updated on the institution's successes.

Creating personalized content for each alumni persona is essential for building rock-solid alumni relations. Additionally, it is important to share content in a way that your alumni persona can relate to. For example, to your philanthropic alumni persona, you could share information about recent donations, charity events, and giveaways. After cultivating a connection with them, you can then ask for their support for your fundraising efforts.

3.3 Recognize alumni

The alumni network can be experts, future employees, future employers, and mentors — recognizing them in these capacities can go a long way in building institutional capacity. There are many ways to do this, such as inviting alumni to attend events and meet high-level visitors, asking alumni to represent the university at various expos, and including alumni in the selection process for admissions and scholarships (alumni are familiar with the culture of the institution or program and know what it takes to succeed). In addition, alumni can be invited or encouraged, formally or informally, to mentor prospective students. Alumni can be great role models and can offer practical guidance to students as they start their studies and careers. Lastly, celebrating alumni achievements reflects their experience in your university or country. All of these efforts establish a mutually beneficial relationship, acknowledging that past attendees and scholarship recipients participate in well-established networks, and connect with a wider community of potential and influential stakeholders.

3.4 Start alumni engagement early

Universities must create strong connections with alumni by providing an excellent student experience. Building this bond before students graduate is vital for establishing a positive relationship with them during and after their college years. If students feel supported, respected, and valued during their time at the university, they will develop a lasting affinity for the institution. It is much easier to foster these connections, while they are still students than after they have left and any negative experiences they had may have already caused them to lose their connection. Investing in the student experience is key to cultivating loyalty and maintaining strong relationships with alumni.

3.5 Consistency is vital

In order to achieve long-term success with alumni engagement, a comprehensive strategy must be designed and implemented. Short-term goals must be met while striving to maintain a consistent approach that will lead to the desired long-term outcomes. It is essential that the institution is committed to this sustained approach in order to ensure success.

If you want alumni to engage with your alumni relations program and form strong connections, you must continuously inspire them through your content, intent, and actions. Be consistent in sharing relevant information and invite them to events, contests, and campaigns to make them feel appreciated. With these practices, you can build a lasting bond with your alumni.

3.6 Content is key

In order to build lasting alumni relations, personalized content must be created for each alumni persona. For example, those alumni who are interested in entrepreneurship should be provided with content related to thought leadership, startup stories, and other relevant topics. Additionally, the content should not be solely focused on asking alumni to contribute funds to your fundraising efforts. Instead, it should foster a sentiment of connection and appreciation. For example, philanthropic alumni can be informed of the latest donations, charity events, and giveaways. Once a sense of loyalty has been established, alumni can then be asked to help support fundraising efforts.

To ensure successful alumni engagement, it is essential to make all content, such as information, landing pages, donation pages, websites, and forms, mobile-optimized and easily accessible on smartphones. This will create an esthetically pleasing and user-friendly experience for alumni regardless of the device they are using.

3.7 Invest in your alumni

The alma mater should strive for a two-way relationship with their alumni. To achieve this, alumni outreach should include professional and personal support such as professional networking events and career services, continuing education opportunities, and the use of campus facilities. Moreover, alumni should be connected through reunions, directories, and technology. Additionally, alumni should be offered continuing education in their career fields or general learning opportunities such as speaking events and seminars.

3.8 Be open to feedback

It is essential to maintain open lines of communication with alumni at all times. All feedback from alumni should be accepted and appreciated as it is a crucial part of the university's commitment to excellence. Alumni engagement programs should also actively seek alumni feedback and incorporate alumni suggestions into their development strategies. To measure the effectiveness of existing approaches, regular feedback from alumni should be sought and used to incrementally improve the program.

3.9 Avoid only financial requests

Outreach should not focus exclusively on donations. While universities are aiming for financial contributions, this should not be the only communication that alumni get. All content should be interesting and engaging, which is hard to do if alumni are all treated identically.

3.10 Assign a reasonable budget

If universities prioritize alumni, they must allocate a budget to do so. Though spending money upfront is necessary, the long-term benefits will be substantial if done right. Therefore, it is important to remember that you have to spend money to make money.

3.11 Invest in technology

Investing in a technology platform for maintaining an updated database, regular communication through emails and messages, hassle-free engagement and discussions, and seamless grievance handling. It can also act as an interface to share news and insights about the institution, furthering the cause of alumni connection and engagement.

4. Conclusion

The study has revealed some of areas that higher education institutions must work on to strengthen alumni engagement. These can serve as guiding principles for other institutions to emulate. The study has also revealed some common aspects that alumni

respond positively to, contributing to alumni engagement. These include providing professional support through networking events and career services, continued use of campus resources, and higher education opportunities among others. It is also important to promote camaraderie through introductions between interested alumni at events, e-seminars, and virtual events, etc.

Author details

Parimala Veluvali[1]* and Jayesh Surisetti[2]

1 Symbiosis School for Online and Digital Learning, Symbiosis International (Deemed University), Pune, India

2 Happea, Raipur, India

*Address all correspondence to: veluvaliparimala@gmail.com

IntechOpen

References

[1] Rawski MJ. The Seven Essentials of Highly Engaged Alumni [Internet]. College of Professional Studies Professional Projects; 2011 Available from: https://epublications.marquette.edu/cgi/viewcontent.cgi?article=1037&context=cps_professional

[2] Newman MD, Petrosko JM. Predictors of alumni association membership. Research in Higher Education. 2011;**52**:738-759. [Internet]. DOI: 10.1007/s11162-011-9213-8

[3] Snijders I, Wijnia L, Rikers RMJP, Loyens SMM. Alumni loyalty drivers in higher education. Social Psychology of Education. 2019;**22**:607-627

[4] Chase J. Relationship building: The key to alumni engagement. Educause Review. 2019. [Internet] Available from: https://er.educause.edu/articles/2021/5/relationship-building-the-key-to-alumni-engagement

[5] Drezner ND, Pizmony-Levy O. I belong, therefore, I give? The impact of sense of belonging on graduate student alumni engagement. Nonprofit and Voluntary Sector Quarterly. 2020;**50**:753-777

Chapter 20

Perspective Chapter: Teacher Education in a Multicultural Globalizing World – Field-Based Reflections

Mohammad Makram

Abstract

International educational contexts are increasing rapidly, and many teachers find themselves working in contexts that they may not be fully aware of. The aim of the current study was to investigate how preservice English as a foreign language (EFL) teachers at an Egyptian higher education institution (HEI) conceptualize international mindedness in light of their teaching practices. To answer the current research question, a semi-structured interview was conducted using qualitative methodology where participants (n = 7) were interviewed online through Teams. These sample participants are in the course of their academic education as preservice English language teachers. The responses were afterward coded and analyzed using thematic analysis. The findings indicate that the participants showed some degree of international-mindedness. The responses also highlight that these preservice teachers' perceptions of international mindedness are pedagogically-oriented, meaning that it is geared toward issues of teaching and curriculum content delivery rather than understanding the nature of international mindedness. The findings are discussed in light of the theoretical framework and the particular context of the current study. Implications for research and practice as well as research recommendations are presented.

Keywords: higher education, teacher education, global/international education, EFL teachers, mindedness

1. Introduction

This chapter introduces the conceptualizations of international mindedness by preservice teachers of English as a foreign language (EFL). In the context of current educational environments, teachers seem to find themselves in contexts where they need to be aware of the educational environment, equipped with the knowledge and skills they need to deploy in their teaching, and able to interact effectively with the school environment and the dynamics of the educational contexts. Overall, the study seeks to develop preservice English language teachers' international and multicultural educational

competencies, but this report focuses on understanding how they conceptualize inter international-mindedness starting point toward such a desired teacher development.

In the Egyptian higher education context, the teacher education system follows a nationwide government-led approach where teacher education follows a three-phase pattern. This educational pattern spans a period of four years (originally three and increased in the mid-twentieth) including teachers being educated in the subject area (major) of specialization, then pedagogical education is introduced either along with or after their subject area-related education, and afterward, some cultural education occurs. This cultural education includes some literacy subjects/courses such as basic computer literacy, environmental education, and human rights [1].

This way, I argue that it is likely that teacher education lacks the element of international awareness that is particularly important nowadays in rapid development and change. This is why there is a need for having a degree of international mindedness to engage effectively with the school and the wider international community that is characterized by differences and diversity in many aspects. I also argue that this mentality or mindedness seems to be graded or scaled and that we as human beings might have varying degrees of it. It can also be adapted, changed, and developed through suitable interventions such as teacher-led discussions, training workshops, and open dialog with teachers.

Specifically, preservice teachers may lack adequate preparation for a teaching career, particularly with reference to international dimensions. Increasing teachers' awareness of international and cultural issues may be one suitable intervention in this regard to increase their teaching competencies and competitiveness in the educational marketplace. This argument receives some credibility in light of the reform efforts undertaken through the past decades on the Egyptian educational system [2, 3]. This claim is also supported by the studies that confirm that current teacher education is falling short of providing effective teachers for the marketplace [1, 4]. This current state of teacher education brings about the need to address issues of the status quo ineffective teacher education such as international mindedness in the teacher education process.

Hence, teacher education in the Egyptian context may need more improvement to equip competitive/effective teachers both inland (at local national institutions) and for the global educational labor market. The issue is that such educational reform endeavors focus on the curriculum and the (in-service) teachers, whereas preservice teachers seem to receive less scholarly research interest. Hence, there seems to be a gap to investigate how these preservice teachers conceptualize international mindedness and if the preservice teachers have a limited understanding of international issues.

The Egyptian teacher education reform efforts can be viewed as qualifying teachers with the necessary knowledge, skills, attitudes, and necessary for effective functioning in international education contexts [5]. In the context of international education, the concept of international-mindedness seems to be recurrent and at the core of international education. International mindedness has recently grasped researchers' attention given the massive widespread of international education as embodied by the globally increasing numbers of international schools, branch campuses, and twinning programs/collaborations in the global higher education systems [6–8]. Back to the definition, international mindedness can be viewed as an attitude toward global engagement and international awareness of issues going on in the world. Hill [9] provides a comprehensive view of the term:

International mindedness embraces knowledge about global issues and their interdependence, cultural differences, and critical thinking skills to analyse and propose solutions … it is about putting the knowledge and skills to work in order to make the

world a better place through empathy, compassion, and openness – to the variety of ways of thinking which enrich and complicate our planet' (p. 246).

In this study and in view of Hill's definition, I contend that international mindedness is a degree of knowledge and awareness of and a set of attitudes toward international issues. International mindedness is multifaceted in nature [4] and embraces a set of features and attitudes. These features are numerous but of more importance is the awareness of global issues and interest in the world's issues and problems, consideration for different perspectives, and awareness of international educational issues. International mindedness is a mindset, an attitude based on openness and understanding of the variety in the world. This brings about the pedagogical consideration that cultivation of such a mindset can be attained through teacher-related training workshops, open discussions, or dialogs on reflective practice. Pragmatically, though mindsets might be untrainable to some degree, exploring international mindedness can shed light on the concept for the preservice teachers who, I argue, might have limited to no understanding of it. This way, they can rethink their pedagogical conceptions, beliefs, ideas, and practices in light of this new paradigm of international mindedness.

International mindedness seems to be complex given the different dimensions that it embraces and it also seems challenging as well [10]. In Muller's terms ([11], p. 26), international mindedness is "an understanding that individuals can prove the state of the world through understanding of global realities, and the accompanying acceptance of the responsibility to take action to do so." To Elerian and Solomou, international mindedness has also to do with global engagement (GE) since both are closely related, referring to issues that cross beyond national borders, such as environment, conflict resolution, human rights, power and privilege, sustainability, world cultures, and awareness of the work of international organizations [12]. The current research is focused on this aspect of international mindedness that includes knowledge of the world and engagement with international issues. These global engagement indicators have to do with a learner's being internationally aware of world issues. Operationally, these features address the multidimensional conception of international mindedness viewed in this study as a degree of knowledge and awareness and a positive attitude toward global issues. In view of the above sections, it seems that a scale of international mindedness is a requirement in educational spheres where global awareness and understanding can help students reap the fruits of the educational process.

2. Rationale

Understanding preservice teachers' perceptions of international mindedness are important to identify the degree to which they possess some of the competencies required for international and multicultural education. Such competencies may be manifested in the teachers' effective practices exhibited in the successful delivery of content knowledge, respect for students, and awareness of extracurricular global issues beyond the course content. Therefore, such competence might include the teachers' beliefs, attitudes, skills, and attitudes that enable them to be effective teachers. This is further intensified given the role of globalization and internationalization of education in the arena of schooling [13], where classrooms are getting increasingly diverse, internationalized in nature, and intercultural/multicultural in principle. Teachers' beliefs, which in turn are largely affected by how they conceptualize things, have a role to play in the educational process as they help us understand how teachers

shape their work. This understanding is significant in understanding their teaching practices, such as the selection of particular methods and techniques, which in turn impacts students' learning and outcomes [14]. Understanding that the preservice teachers' conceptualization of international mindedness can help identify the differences between understanding and what is laid out in the literature.

Given the teacher's role in educational success as the professional agent and the most directly responsible in the learning process [15], proper preparation of the teacher is evidently significant. Well-prepared teachers are teachers who can bring about effective educational outcomes, such as effective delivery of course content and respect for individual learners as evidenced by such studies as in Ref. [16]. These researchers found that there is a significant correlation between teachers' training and student test results. One such positive outcome mentioned above is the requirement that teachers should be aware of how to respond to that complex globalized situation, which necessitates that teacher education curriculum should also prepare them for such a classroom, and for the whole world at large [17]. It seems like preservice teachers' perceptions of international mindedness received limited attention from researchers in the Egyptian higher education context with a focus on developing their pedagogical and linguistic skills (e.g., [18–21]).

This is the case of English teacher education that is the same across Egypt's HEIs since the educational system is centralized although course content can vary from one governorate (county) to another. Given the globalizing and internationalizing educational atmosphere, teacher education can be questioned if it is properly preparing preservice teachers for such an educational environment in which the local seems to be interacting with the global. In this Egyptian higher education context, the teaching and learning atmosphere is more exam-oriented rather than reflection-based, and efforts for reform have continued to be conducted over the past few decades [22–25]. The focus on passing exams and delivery of curriculum content seems to leave little space for teachers (preservice and in-service) to reflect and rethink their teaching—this comes at the expense of international mindedness that exhibits a tendency toward being inquisitive and reflecting/thinker [26]. There seems to be less focus on international aspects/issues of teacher education since the previous studies (e.g., decades) [22–25] focus on the content at the expense of the teacher.

3. Review of literature

This review introduces international mindedness as the key concept in the current study, and a concept that might have received some scholarly interest and investigation in the context of international education. The current review of literature addresses the theme of international mindedness and subthemes related to it. One subtheme is the evolution and development of the concept of international mindedness. I also go through some features of international mindedness, indicating how international mindedness sits within international educational contexts. Another issue of interest is understanding why international mindedness is necessary for the educational process, and why having teachers with international mindedness is important too. Furthermore, the literature sheds some light on how international mindedness looks like in the teacher preparation curriculum and the state of the art of knowledge on international mindedness in the teacher preparation curriculum with particular reference to the Egyptian context. Therefore, a clear idea of the concept of

international-mindedness can be formulated so that further practical research can then be conducted.

3.1 International mindedness: An introduction

Recently, the necessity to make university courses more internationally and culturally relevant/sensitive springs from the recognition that higher education is in charge of preparing all students for life in such an ongoingly diverse, interconnected, and the interdependent world. International mindedness has features including interest in human beings, openness to different cultures, the interrelatedness of people, and respect for cultural differences/backgrounds [17]. This concept can be seen as bringing into mind a set of attitudes that an educational stakeholder has to adopt to be described as internationally minded [27].

3.2 Definition of international mindedness

This section sheds light on some literature addressing researchers and practitioners defining international mindedness. Such definitions can help clarify how it is viewed by scholars while disclosing some of its core features and dimensions. Before starting to define international mindedness, the notion of international is worth a quick look. The very linguistic (morphological) analysis of the word international features the prefix inter meaning between, and national is an adjective indicating that the term international has to do with between-nations issues, problems, solutions, and interactions.

Bailey and Harwood [28] contend that defining international mindedness is a challenging task. Being internationally minded sounds like an attitude in itself as described by Singh and Qi (2013, 13) who defined international mindedness in light of the international diploma programs (IDP) as "an attitude of openness to, and curiosity about, the world and different cultures" [7]. It is concerned with developing a deep understanding of the complexity, diversity, and motives that underpin human actions and interactions. The issue here is that the definitions available seem to be generic and not considering the different local contexts, which might bring about localized definitions of international mindedness. Such localized definitions can have some features of international mindedness as described in the literature (maybe to some degree), but not necessarily all of them. In this study, I agree with Singh and Qi's definition of international mindedness since it gives a clear clarification of the concept, and an operational definition of the concept can be derived from it.

3.3 Origins of international mindedness

The origins and evolution of the concept of international mindedness deserve some exploration in order to understand how it is contextualized in the context of international education. Knowing such origins can help inform the process of preservice teacher training simply by identifying which factors had an impact on the concept development and thus, such factors can be taken into consideration in future educational reforms. Originally, international mindedness is a call for peaceful coexistence, and this is indicated by Mead's (1929), as cited in Cause's [29] statement that international mindedness developed after the First World War (WWI) as a political concept where the history of the phrase goes back at least as far as 1929 [30].

At this stage of world turmoil, the need for international cross-bordering educational programs was much felt by educators and families at the time of world war [30]. International schools had sprung up in different spheres of the world to cater to educating the children of parents working outside their home countries (internationally), particularly for the United Nations (UN) agencies and outposts [31]. The longest surviving of these schools was the International School of Geneva founded in 1924, principally by UN employees. These forms of schools were meant to provide a curriculum that is described as being international. The international curriculum is the curriculum delivered at such international schools. One example of such an international curriculum is the international baccalaureate, which was an academic program thought to be able to promote peace and coexistence [29]. It was first founded in Geneva, Switzerland, in 1968 and provides an international curriculum for thousands of schools across the globe [32]. Based on the above account of the origins of international mindedness within international schools, it sounds like the view of international education as cross-bordering educational institutions is quite limiting and narrow since the curriculum itself might be national rather than international.

Tracing the concept of international mindedness, Hill (2012) indicates that it was not until the 1960s that a curriculum for international mindedness appeared in the form of the International Baccalaureate Diploma Programme (IBDP), whose first examinations for official candidates took place only in 1971 [9]. The special aspect I could observe about the IBDP is the specification of the learner, as well as teacher profiles, and the emphasis on the international and multicultural environment of the teaching-learning process. But the concept has origins that date back much earlier than the twentieth century, as Hill argues that international mindedness is reflected within the philosophy of international education that first came into existence in the seventeenth century by the Czech pedagogue, philosopher, and humanist, John Comenius (1592–1670).

Comenius presumably places the beginning of international education that underpins the ethos of international mindedness. He argued for democratic education that incorporates both males and females at a time when girls rarely went to school. That education would serve to educate nations and aim to bring scholars from different countries to study together. Possibly, Comenius's democratic education entailed a kind of mindedness that can be described as international as it was more inclusive (of deprived category/population of females) and democratic (equitable opportunities available for all learners). In this study, I might consider different experiences with training and educating international education teachers with a special focus on the International Baccalaureate (IB) program as it has been established for decades.

The concept of international mindedness continues to evolve through the following centuries as well. Hill (2012) mentions that, in the eighteenth century, international mindedness was reflected in the educational philosophy of Jan Jack Rousseau (the European philosopher and educationalist) about international mindedness in that learning should be heuristic, stemming from natural curiosity and personal experience, rather than imparting facts—which is an important pedagogical process for facilitating international mindedness. This, in a way, seems to be related to global engagement since engagement requires reflection, thinking, and openness to different perspectives [9].

3.4 Features of international mindedness

There are a number of features peculiar to international mindedness, which support the opinion that it is a mental personal attitude that can be activated within a

certain social context. International mindedness has many features, but for the purpose of the confirmation process, this report will focus on only the following features by which an operational definition of the concept can be identified. The following list illustrates that:

- Curiosity and interest in the world: Haywood [33]; Singh and Qi [9]; and Whitmarsh [32]
- Global engagement: Syeda [34] and Wasner [8]
- Open-mindedness: Whitmarsh [32]
- Reflectiveness: Whitmarsh [32]
- Communication: Whitmarsh [32]

Operationally and in view of these features, international mindedness is an attitude of openness toward, interest in, curiosity about, and engagement with the world and its international issues and concerns. One concluding remark here is that international mindedness can be seen as a continuum as not all people (or teachers) are internationally minded similarly; some will adopt certain of the above features, while others will simply consider them based on parameters of personal background, experiences, and conceptions. Also, the same person can be said to be internationally minded partially or fully based on the degree to which he/she adheres to the above features.

3.5 Significance of international mindedness

International mindedness seems to feature a number of benefits that cumulatively provide a pedagogy that incorporates international mindedness in the curriculum. Educators need to nurture a degree of international mindedness in students to be world/global citizens. The fact that the world is being even more and globalized affords a space for the need for international mindedness to allow people to communicate globally based on a degree of respect based on an understanding of human nature. As illustrated by Metli and Lane [35], given that, the world is increasingly interconnected, globalized, and multicultural, there are more opportunities for people of today's world to communicate easily with those with different cultures. Hence, the role of international mindedness is to facilitate such global-scale communication between world nations. In the world of accelerating global changes, global engagement and intercultural understanding might indicate that one needs to have a form of awareness that can facilitate intercultural human dialog and communication, and this is potentially supported by international mindedness.

3.5.1 Applications of international mindedness

Literature is generally learner-centered when it comes to consideration of issues on international mindedness in educational contexts. That is why the focus of the current research has shifted from that toward more consideration and emphasis on the position of (preservice) teachers while attempting to envisage how they primarily conceptualize international-mindedness as a critical element in international education

contexts. By fostering an ethos of mutual respect and facilitating humans' international understanding, international mindedness can facilitate respect and equality. According to Habib [36], the rationale for adopting internationally minded practices in pedagogical practices is the need for opportunities where people of the world are interacting with one another through education, media, business, technology, or in multiple other ways. An exploration of international mindedness centers around the learner and focuses on bringing to the foreground the learners' understanding of how their teaching practice can be influenced by their own beliefs and cultures [37].

It seems that developing a globally competent teacher is justified in the context of international education. By adopting international mindedness, both the teacher and student can understand various cultures embodied in the school context, in such an atmosphere that promotes mutual understanding and respect. These applications did not go without its criticism. Belal [38] indicates that one such prominent application of international-mindedness in schools is the IB programs. In the International Baccalaureate Diploma four programs, international mindedness seems to be idealistic and implied in the IB school's mission statement but not directly addressed. Belal also continues to clarify that participation in the IBDP can help achieve international mindedness, but it is the school's diversity that contributes more toward achieving this attitude/mindedness. It might be the very nature of the educational process and curriculum that can help enrich or hamper the tendency toward international-mindedness.

This issue of school diversity highlighted by Belal [39] seems to have scholarly credibility among other researchers. For instance, as stressed by Hill [31], participation in an international community or activities like international fairs in itself is not sufficient for instilling an attitude of international mindedness, but the role of the school is to infuse that attitude *via* a formal curriculum, based on principles of international education. Hill further contends that international educational approaches can be adopted and integrated even into national educational contexts (e.g. schools) given they are open to the world, which further highlights the role a teacher and the school system can play to foster a culture of internationalism.

Additionally, challenges might arise when it comes to the application of international mindedness either at theoretical or practical levels. In the account of the deviations and challenges facing the concept, Savva and Stanfield [40] clarified that to provide any understanding of international mindedness in the IB context, the understanding needs first to fit within the broader IB mission statement. Practically, within the IB schools that feature the international student learner profile, some criticisms were raised as the profile has no theoretical justification and ignores the complexity of human nature while stressing the absoluteness of single characters [41–43]. It can be seen that one individual or student can have a feature of that profile in one aspect but not the other, and it might be so in one instance not in another. For example, being open-minded as a learner seems to be scaled since the learner may be open-minded to a degree that differs from the other. Also, a learner who is open-minded might not necessarily be a good communicator.

These challenges should not be a hindrance toward achieving the ethos of international mindedness as exhibited in the features of the concept. As suggested by Savva and Stanfield [40], despite challenges, schools can use a variety of techniques to develop shared understanding, and this can be achieved in various ways. For example, new staff and student orientation sessions, homeroom or advisory groups, assemblies, and parent-teacher conferences can be organized and promoted. One remark is the need for aligning the features or dispositions embedded in international

mindedness with the context where it is to be implemented, meaning that adaptation to the various national contexts has to be taken into consideration for achieving the optimum benefit.

3.6 International mindedness in teacher education contexts

Now the question is about the role of international mindedness in practice. In other words, how international mindedness looks like in the teacher education (TE) curriculum? In essence, catering to an internationally minded teacher education curriculum is an issue that has to consider some points about context, teacher personality, background and readiness, and more.

One educational requirement of the curriculum in the context of international mindedness is to be sensitive (i.e., respective) to other cultures. The TE curriculum has to prepare teachers for a teaching context that is basically, ethnically, and culturally diverse. International mindedness can be developed in different aspects of student's education continually through curricular, co-curricular, and extracurricular activities [6]. One way the curriculum can help boost teachers' international mindedness by fostering their self-reflection. It is critical also that teacher candidates understand the importance of knowing bout learners' backgrounds and experiences and understand that language, culture, and identity are deeply interconnected, and how cultural groups and individual cultural identities affect language learning and school achievement [44].

Practically, the emphasis on curriculum sensitivity toward cultural issues is a call for change, a need for rethinking teacher education in a world of ongoing rapid change. One starting point can be through adopting a teacher-centered approach toward teacher education (and training) development pursuits, and this can be facilitated through listening to (preservice) teachers' voices and understanding their viewpoints regarding curriculum development and reform. Such reform can start by first understanding teachers' basic conceptions about trending issues, such as international education and international mindedness, particularly if their teaching backgrounds did not consider nowadays educational trends.

3.7 International mindedness and Egyptian teacher education

Through the past decades, international mindedness was considered in different school contexts in different parts of the globe. For example, in the Latin context, a study by Castillo-Clark (2018) explored the development of international-mindedness in teacher candidates. Using interviews with preservice teachers, the study could investigate preservice teachers' perceptions of international mindedness with the purpose of developing it among this group. In a Western context, Budrow [45] examined international mindedness in a Canadian international school-based context with three in-service teachers (ISTs), who are Canadian of Anglo-European descent and beginning their formal careers in international schools international mindedness. Findings suggest that some elements of international mindedness are more readily appreciated and practiced by these novice teachers, such as curiosity and openness, to know and understand others and the world, while others require greater awareness and effort to attain, such as gender-related issues. The findings also suggest foregrounding the importance of critically reflecting upon one's "localness" in the world.

In another study within the Middle Eastern context, Habib [36] endeavored to examine higher education faculty members' understanding of international

mindedness. Participant faculty members also reflected a lack of professional development and understanding of local and international dynamics, where specialized educational programs were important factors. Finally, the study concluded with implications for professional growth platforms to foster international-mindedness in educators so that they can promote international-mindedness in students in return.

Similarly, the Arabic context seems to exhibit some interest in such global scholarly interest in these educational concepts as international mindedness. For instance, Alhuthaif [46] explored the conceptions and practices of international mindedness of four English as a foreign language (EFL) faculty members in higher education programs at a Saudi university. The study had the following four conclusions: (1) basic language skills, grammar, and intercultural understanding are intertwined in Saudi EFL programs; (2) education technology promotes intercultural communication through interactive learning experiences; (3) the participant Saudi EFL faculty were able to describe international mindedness and use it in the classroom through intercultural competence although they might have not heard about it previously; and (4) references to international perspectives in EFL curricula and practices seem to be minimal in the data collected and thus require further attention in the Saudi EFL curriculum in future research.

In the Egyptian context, very little is known about the concept of international mindedness by both teachers and students, whether at policy or practice levels. Surveying literature across some notable educational databases, I could not identify any pertinent literature or research that addresses the issue of international mindedness in the context of (preservice) teacher education whether at the policy level or the practice level. Despite international education increasing in the Egyptian context, given the notable increase of international schools and universities, such as the case of branch campuses, teacher education has encountered no change in response—hence the contribution of this study.

A study by Belal [39] addressed international-mindedness in international schools in Egypt. Belal clarifies that although the rapidly expanding International Baccalaureate Diploma Programme (IBDP) is a well-recognized program perceived to offer best practices in education, including developing international mindedness in students and engaging with the local communities, there is little empirical evidence to support these outcomes. This study concludes that engagement with the diverse local community was not perceived by participants as one of the main outcomes of offering the IBDP, whereas the diversity of the school student body was perceived as an integral factor in helping students develop a wider worldview and international mindedness. The study has a learner-centered approach, while teacher preparation received no attention.

Studies on international mindedness are a bit limited in the Egyptian context and the above instances are, to the best of my knowledge, the most pertinent ones. Therefore, the gap that this study attempts to fulfill is finding out how international mindedness is perceived by (English as a foreign language) preservice teachers, thus giving insights into prospective research endeavors aiming toward the development of teacher education curriculum.

4. Concluding remarks

This chapter was used to provide an understanding of international mindedness as an important educational concept that resonates in different international educational

contexts. The review discussed issues on defining international mindedness, its origins, features, and how it is contextualized in the curriculum. A special emphasis and reference have been made in the context of the Egyptian teacher education curriculum as the context of this study. This further has led to the design of the current research methodology being quantitative, in nature, so that preservice teachers can be given the opportunity for reflecting on what it means to be an internationally minded teacher—which is the focus of the next chapter.

Author details

Mohammad Makram
Faculty of Education, Department of Curriculum and Instruction, Assiut University, Egypt

*Address all correspondence to: mohammadmakram@edu.aun.edu.eg

References

[1] Alshamy A. Teacher education programmes at Alexandria University with reference to tuning methodology. Tuning Journal for Higher Education. 2016;**3**(2):281-317. DOI: 10.18543/tjhe-3(2)-2016pp281-317

[2] Ginsburg MB, Megahed NM. Global discourses and educational reform in Egypt: The case of active-learning pedagogies. Mediterranean Journal of Educational Studies. 2008;**13**(2):91-115

[3] The World Bank. Egypt: Reforming Public Education to Learn for Life Not Just for Exam Papers. NY, New York: The World Bank; 2019

[4] Hayden M, Levy J, Thompson J. The SAGE Handbook of Research in International Education. NY, New York: SAGE Publications Ltd; 2007. DOI: 10.4135/9781848607866

[5] OECD. Education at a Glance 2015: OECD Indicators. Paris: OECD Publishing; 2015. DOI: 10.1787/eag-2015-en

[6] Metli A, Martin RA, Lane JF. Forms of support and challenges to developing international-mindedness: A comparative case study within a national and an international school in Turkey. Compare: A Journal of Comparative and International Education. 2019;**49**(6):983-1001. DOI: 10.1080/03057925.2018.1490889

[7] Singh M, Qi J. 21st Century International-Mindedness: An Exploratory Study of its Conceptualization and Assessment. Dublin: International Baccalaureate Organization; 2013

[8] Wasner V. Critical service learning: A participatory pedagogical approach to global citizenship and international mindedness. Journal of Research in International Education. 2016;**15**(3):238-252. DOI: 10.1177/1475240916669026

[9] Hill I. Evolution of education for international mindedness. Journal of Research in International Education. 2012;**11**(3):245-261. DOI: 10.1177/1475240912461990

[10] Jurasaite-O'Keefe E. Defining and cultivating international mindedness: Perceptions and perspectives of students in the international baccalaureate middle years program. RMLE Online: Research in Middle Level Education. 2022;**45**(2):1-17

[11] Muller GC. Exploring Characteristics of International Schools That Promote International-Mindedness (Order No. 3494836) [Thesis]. New York: Teachers College, Columbia University; 2012

[12] Elerian M, Solomou EA. International schools, international mindedness, and the development of global citizenship: Reflections from a case study of international schools in Cyprus. Prospects. 2022. DOI: 10.1007/s11125-021-09585-

[13] Rietdijk W. Schooling internationally: Globalization, internationalization and the future for international schools. International Journal of Research & Method in Education. 2012;**35**(2):219-220. DOI: 10.1080/1743727X.2012.696482

[14] Gilakjani AP, Sabouri NB. Teachers' beliefs in English language teaching and learning: A review of the literature. English Language Teaching. 2017;**10**(4):78-86. DOI: 10.5539/elt.v10n4p78

[15] Boudersa N. The importance of teachers' training and professional development programs in the Algerian educational context: Toward informed and effective teaching practices. 2016. Available from: http://exp-pedago.ens-oran.dz-Numéro1-October

[16] Rahman F, Jumani NB, Akhte Y, Chisthi SH, Ajmal M. Relationship between training of teachers and effectiveness teaching. International Journal of Business and Social Science. 2011;**2**(4):150-160

[17] Alstine VSK, Holmes AV. Development of international-mindedness and preferences for world music in teacher preparation coursework. Journal of Education and Training Studies. 2016;**4**(11):194-205

[18] Abdallah MS. The internet in EFL teacher education: Investigating the possibilities and challenges in a pre-service teacher education programme. Sino-US English Teaching. 2011;**8**(1) (Serial No. 85):1-10

[19] Elghotmy HEA. Investigation into the Microteaching Practices of Egyptian Preservice Teachers of English in an EFL Teacher Preparation Programme: Implications for Curriculum Planning and Design [Thesis]. Exeter, England: Open Research Exeter, University of Exeter; 2012

[20] Gebril A. Language teachers' conceptions of assessment: An Egyptian perspective. Teacher Development. 2016;**21**(1):81-100. DOI: 10.1080/13664530.2016.1218364

[21] Salem AA. The effect of writer's workshop approach to develop functional writing skills of primary stage pre-service English language teachers in Egypt. International Journal of Applied Linguistics & English Literature. 2013;**2**(5):70-80. DOI: 10.7575/aiac.ijalel

[22] El Sebai NM. The Egyptian higher education system: Towards better quality in the future. Journal of Futures Studies. 2006;**11**(2):75-92

[23] Organisation for Economic co-operation and Development & the World Bank. Reviews of National Policies for Education Higher Education in Egypt. Paris: OCED & WB; 2010

[24] Said ME. Higher education systems and institutions, Egypt. In: Shin J, Teixeira P, editors. Encyclopedia of International Higher Education Systems and Institutions. Dordrecht: Springer; 2017. DOI: 10.1007/978-94-017-9553-1_447-1

[25] UNESCO International Bureau of Education. World Data on Education. Geneva: UNESCO International Bureau of Education; 2006

[26] International Baccalaureate Organisation. IB Learner Profile. Cardiff: International Baccalaureate Organisation; 2013

[27] Bhavnani J. Enhancing international mindedness. In: IB Conference of the Americas 2013, New Orleans 18th-21st July, 2013: Innovate, Educate, & Create. Cardiff: International Baccalaureate; 2013

[28] Bailey K, Harwood R. Evaluating and fostering international mindedness. International School. 2012;**15**(2):18-20

[29] Cause L. The Development of International Mindedness in an Australian Primary School [Thesis]. Australia: Deakin University; 2012

[30] Dewey NP. International Mindedness: Conceptualizations and Curriculum in an International School in Brazil [Thesis]. Minnesota, USA: The Faculty of University of Minnesota; 2017

[31] Hill I. In: Internationally-minded schools. International Schools Journal, X), 24-33- International Baccalaureate Organization, editor. The IB diploma programme statistical bulletin. Cardiff: International Baccalaureate Organization; 2000, 2008

[32] Whitmarsh D. Fields, habitus and the international Baccalaureate's interpretation of international mindedness. Journal of Research in International Education. 2022;**21**(2):123-138. DOI: 10.1177/14752409221122048

[33] Haywood T. A simple typology of international-mindedness and its implications for education. In: A Simple Typology of International-Mindedness and its Implications for Education. NY, New York: SAGE Publications Ltd; 2007. pp. 79-89. DOI: 10.4135/9781848607866

[34] Syeda M. Fostering International Mindedness in International Baccalaureate Classrooms: A Case Study of Two Teachers. Vol. 10939. Montana: University of Montana: Graduate Student Theses, Dissertations, & Professional Papers; 2017

[35] Metli A, Lane JF. International mindedness: A revised conceptual framework. Journal of Research in International Education. 2020;**19**(3):202-219. DOI: 10.1177/1475240920976229

[36] Habib Z. International mindedness and intercultural competence: Perceptions of Pakistani higher education faculty. Journal of Education and Educational Development. 2018;**5**(1):60-79

[37] Castillo-Clark KP. International Mindedness: Phenomenological Inquiry into Teacher Candidate Experiences. Chicago: Loyola University Chicago, Loyola Commons; 2018

[38] Belal SM. Identification of the Intended and Unintended Outcomes of Offering the International Baccalaureate Diploma Program in an International School in Egypt [Thesis]. Minnesota, USA: The Faculty of The University of Minnesota; 2015

[39] Belal S. Participating in the international baccalaureate diploma programme: Developing international mindedness and engagement with local communities. Journal of Research in International Education. 2017;**16**(1):18-35

[40] Savva M, Stanfield D. International-mindedness: Deviations, incongruities and other challenges facing the concept. Journal of Research in International Education. 2018;**17**(2):179-193. https://doi.org/10.1177/1475240918793954

[41] Bunnell T. The Changing Landscape of International Schooling: Implications for Theory and Practice. Oxford: Routledge; 2014

[42] Wells J. International education, values and attitudes: A critical analysis of the international baccalaureate learner profile. Journal of Research in International Education. 2011;**10**(2):174-188

[43] Wells J. Learner reflections on the international baccalaureate learner profile and international mindedness at a bilingual School in Bogota, Colombia. Journal of Research in International Education. 2016;**15**(3):277-277

[44] Lucas T, Villegas AM. A framework for preparing linguistically responsive teachers. In: Lucas T, editor. Teacher Preparation for Linguistically Diverse Classrooms: A Resource for Teacher Educators. New York, NY: Routledge; 2011. pp. 55-72

[45] Budrow J. Being and becoming internationally minded: Snapshots of

novice Canadian teachers in international schools. Journal of Research in International Education. 2021;**20**(3):211-225. DOI: 10.1177/14752409211060137

[46] Alhuthaif A. International Mindedness within Intercultural Competence: A Collective Case Study of Faculty's Conceptualizations and Practices of International Mindedness in One Saudi EFL Higher Education Institution in an Effort to Achieve Saudi Arabia's Vision 2030 (No. 13424243) [Thesis]. USA: The Graduate School of Education and Human Development, The George Washington University; 2019

Chapter 21

Perspective Chapter: Reflections on the Future of Higher Education in the United Kingdom

Jonathan Blackledge

Abstract

The problems being faced in the UK university sector are considered, how these problems have arisen, what needs to be done about them, and, how the future of the UK's knowledge economy will be influenced by the strategies currently being implemented by the UK government. This is done by revisiting some examples of problems from the past, and how they were solved. It is undertaken using a framework that is characterised by the following fundamental issues: (i) educational philosophies; (ii) ethics in educational provision; (iii) knowledge economies, and; (iv) the goals of education. In this context, the chapter discusses the evolving, and necessary connectivity, between government, education and industry - the so-called 'Triple Helix Concept'. This is coupled with a discussion on the future of Higher Education in terms of the underlying strategy of the UK government, which reflects the new age of the 'Technological College' that the UK is now entering.

Keywords: higher education, educational philosophies, apprenticeship Programmes, technological colleges, government strategy

1. Introduction

In this chapter, the current problems being faced in the UK university sector are considered, how these problems have arisen, what needs to be done about them, and how the future of the UK's knowledge economy will be influenced by the strategies now being implemented by the government. This is done by revisiting some examples of problems from the past and how they were solved, lest we fail to appreciate the words of the Spanish Philosopher, George Santayana [1]: 'Those who do not remember the past are condemned to repeat it'. In this context, the chapter considers the state of Higher Education (HE) in the United Kingdom. This is undertaken using a framework that is characterised by the following fundamental issues:

i. Educational philosophies;

ii. ethics in educational provision;

iii. knowledge economies, and;

iv. the goals of education.

The chapter considers how and why the UK's apprenticeship centres were established in the 1880's as a direct consequence of social and economic issues that led to problems which are very familiar today. The chapter also briefly considers the background to a reformation in English education that occurred in the 1650's and the longer term effects it had on society in both the UK and beyond. In this respect, the chapter discusses the evolving and necessary connectivity between government, education and industry - the so-called 'Triple Helix Concept' [2]. This is followed by a discussion on the future of education in terms of the underlying strategy of the UK government. It is undertaken by considering two case studies that are reflective of the new age of the 'Technological College' that the UK is now embarking upon; colleges that are destined to replace many rank-and-file universities. The concluding remarks are coupled with some final thoughts in regard to a generic educational philosophy for the future.

2. Educational philosophies

In his book *Novum Organum* [3], Sir Francis Bacon introduces the four 'Idols of the Mind' and asserts that each of these 'Idols' prevents human beings from attaining a true understanding of things. His 'Idol of the Tribe', is the tendency to treat human observation and reason as infallible, forgetting that all humans tend to distort what they perceive. The 'Idol of the Marketplace' is the debasement of words and their misuse to generate propaganda as we refer to it today, twisting words to obscure the truth. His 'Idol of the Theatre' concerns the belief in dogmas or systems of philosophy that distort reality. Like a work of drama in a theatre, these systems are only approximations or models of the truth. In terms of education, Bacon's 'Idol of the Cave' is most appropriate. This is the idol that concerns the individual human tendency to treat our own ideas as objective and not to take into account that all individual human wisdom is subjective and coloured by one's own experiences. In this way, people tend to become blind to their passions and enthusiasm, their devotions and ideologies, which leads to a misunderstanding in the true nature of things [4]. And this is where education plays such a vital role, by providing resistance to Bacon's 'Idol of the Cave'.

For Francis Bacon, education was an indispensable aid to progress in society including moral progress. His view was that education would lead to a greater body of the population that could, 'read not to contradict and confute, nor to believe and take for granted, but to weigh and consider'. Such views were of course the antithesis of his times, in which the belief systems of a strictly monotheistic society were a source of authority and control and not to be weighed in the balance but adopted as an absolute truth. In this sense, many of Bacon's philosophical ideas were nothing new but part of the Renaissance and the age of enlightenment, based on the re-birth of Hellenism throughout Europe that was taking place in his time and continues to this day.

In the context of Bacon's 'Idol of Cave', there are two quotes that are motivational in terms of educational philosophies. The first of these is from the 'Lord of Reason' Bertrand Russell who was one of Britain's finest mathematicians and philosophers and had a profound influence on the developments in Artificial Intelligence and Analytical Philosophy, for example, winning the Nobel Prize for Literature in 1950. Russell was also an outspoken social critic and a vehement advocate of freedom of expression

stating that, 'We are faced with the paradoxical fact that education has become one of the chief obstacles to intelligence and freedom of thought' [5]. This is a statement that should appeal, to many academics having to deal with an army of administrators that frequent today's universities and fail to understand that their purpose is to support scholars for the sake of the students and not to control them and the curriculum that is exercised, especially, when it emanates from central government.

Russell's statement, that of education being an obstacle to intelligence and freedom of thought, is perhaps closely related to another observation, which is from a very different and earlier source. In 1766, James Boswell published a book on the 'Life of Dr Samual Johnson'. In regard to education, Johnson is said to have stated the following: 'Talking of education, people now days have got a strange opinion that everything should be taught by lectures. Now, I cannot see that lectures can do so much good as reading the books from which the lectures are taken. I know nothing that can be best taught by lectures, except where experiments are to be shown. You may teach chemistry through lectures; you might teach the making of shoes with Lectures' [6].

It is arguable that of many subjects that Johnson could have considered by way of examples in regard to being taught by lectures, chemistry and the making of shoes are not appropriate, as both are practical laboratory-based, and hands-on activities, respectively. Nevertheless, the point that Johnson makes is very relevant today, and is a reflection of the transition that is now taking place. Instead of school leavers going to a university so that they can be lectured to, they are now being encouraged to enter 'earn as you learn' apprenticeships, where they can obtain the hands-on training required to develop a career. To learn how to actually do things and make things, as opposed to attending lectures and then talking about them in the cloisters of a university. In this respect, the German-based apprenticeship scheme, for example, has been an ideal model to adopt for many years.

Bertrand Russell's observation that education is one of the chief obstacles to intelligence and freedom of thought is a reflection of the current problem. Johnson's observation, that nothing can be best taught by lectures is a reflection of the solution. That is, and, as will be discussed later, the development of new 'Technological Colleges' in which student apprentices are properly trained by industry-based experts in subjects that are relevant to the economic development of the state.

In respect of the educational philosophy considered in this chapter, a new approach to HE is in the process of being forged through the introduction of new apprenticeship programs which are set to replace conventional university activities. In the UK, the 2020 vision was set to address the imbalance that has occurred given that 'A nation flourishes when it realises the full potential of all of its people. As a one-nation Government, this is what we are committed to achieve. Around the world, apprenticeships have long been recognised as a crucial way to develop the skills wanted by employers. That is why the Government will increase the quality and quantity of apprenticeships in England, reaching three million starts in 2020' [7]. The reasons for introducing this vision, which has yet to be achieved in the UK, are embedded in a problem that lies at the heart of Ethics in Educational Provision as discussed in the following section.

3. Ethics in educational provision

There was a time when education focused on the "three R's"; Reading, Writing, and Arithmetic. Now we have a situation in which the "three D's" are prevalent; Degree, Dole, and Debt [8]. It is, a quite appalling realisation, that there is now a steady 'flow' of UK graduates, going from a graduation ceremony straight into

unemployment, after having been burdened with an average debt of the order of 50,000 GBP in student fees, accommodation and other living costs. And this is more often than not for the privilege of being able to receive nothing more than a so-called 'Micky Mouse Degree'. This phrase was first used in 2003 by Margaret Hodge as part of a discussion paper on the expansion of Higher Education, who was the UK Minister of State for Universities (11 June 2001–13 June 2003) [9]. Hodge referred to a Micky Mouse degree course as one 'where the content is not as rigorous as one would expect, and where the degree itself does not have huge relevance in the labour market, and that simply stacking up numbers on Mickey Mouse courses is not acceptable'.

In respect of this statement, there is a fundamental moral issue to be considered in association with ethics in educational provision. This is whether it is ethical to treat young and vulnerable people in this way and in effect, use their basic naivety to extract money out of them before they have had a chance of earning a living. Moreover, what value can such graduates have in the development of a knowledge-based economy.

It is quite literally a waste of a generation, prohibiting the contributions that they could make to society and thereby creating a future for themselves and their children. It would appear that the original drive in the 1990s to get more school leavers to pursue a university education in order to soak up youth unemployment has only made the situation worse. Instead of having a generation of unemployed school leavers, we now have a generation of unemployed university graduates burdened with debt. This is a situation that can no longer be tolerated and 'Britain's great university scam can't be allowed to destroy another generation' [10]. However, it s a situation that is not new, and has a synergy with the state that the UK found itself in during the 1870's due to the 'Bismarck effect' as shall now be explained in the following section.

4. The Bismarck effect

In the mid-Nineteenth Century, the British Empire was at its zenith, and it started to focus on consolidating its trading dominance. In addition to basic schooling, its educational provision was based on two principal categories: (i) 'Public Schools' which were then as now, very private and fee-paying institutions, and focused on educating an elite for the governance of a worldwide trading empire; (ii) technical institutes whose purpose was to maintain the industrial infrastructure of, what at the time was the 'workshop of the world'.

In the 1870's, two major industrial competitors of the UK came to fruition in the form of the United States of America and the new German state which was proclaimed on 18 January, 1871. The latter case was a direct consequence of the considerable political competence of Otto von Bismarck who was the first Chancellor of Germany until 1890, specifically Minister President of Prussia from 9 November 1873 to 20 March 1890 [11].

Both the USA and Germany introduced educational initiatives to promote the rapid development of science, engineering and technology in order to support industries aimed at driving the prosperity of the new nation states. However, there was a significant difference in the approach taken. Developments in the USA were primarily driven, then as now, by entrepreneurship and private enterprise. This led to a considerable stream of inventions and business innovations that have dominated the world ever since. Examples include the inventive genius of Thomas Edison and Nikola Tesla, for example. The development of early telecommunications by Alexander Bell, and

the creation of the automotive industry by business icons such as Henry Ford. However, in Germany, industrialisation was organised and controlled more fully by central government. This was primarily based, then as now, in Westphalia and Lower Saxony which are areas of Germany able to provide the natural resources for the production of steel, a material that at the time, was the mark of an industrial nation state.

The German unification strategy that Bismarck created and implemented, led to the new country flourishing in the arts and sciences, in engineering and technology, and especially, in chemical engineering. Consequently, Germany started to be transformed into a major industrial competitor and economic power. This transformation was served by a progressive written constitution and driven by a state education system with a broad curriculum, coupled with a social welfare provision that was decades ahead of the UK for the time. Bismarck was in fact the first to establish a welfare state in a modern industrial society with the social welfare legislation of 1883 [12].

All this German activity disturbed the status quo of the British establishment for similar reasons to those associated with the current emergence of China, which is disturbing the balance of an assumed normality dominated by the USA today. It led to the 'Great Depression' of the 1870's which severely compromised the dominance of the UK, and caused many British engineers to seek employment and adventure overseas. Something had to be done. What was done is discussed in the following section.

5. British response to the German Tiger

In a letter written on 12 June, 1899, from Queen Victoria to her eldest grandson, William the Second, Emperor of the German Empire - the Second Reich - she states the following: 'I never personally attacked or complained about prince Bismarck, though I knew well what a bitter enemy he was to England and all the harm he did' [13].

Why should, in a purely political sense, Victoria call Bismarck a 'bitter enemy of England'? After all, Bismarck was a great admirer of England, he spoke fluent English, and was a scholar of the works of Francis Bacon and William Shakespeare, for example. It is because Bismarck represented a disturbance to the British comfort zone of the time, which always occurs with the emergence of a new order, especially when that order is based on competence.

Victoria's letter was representative of the British establishment's attitude to Bismarck, one that was essentially predicated on a mixture of arrogance, Margaret Thatcher's definition of socialism, and above all, fear. In order to help compete with the emerging 'German Tiger', and indirectly control it, the British establishment encouraged Queen Victoria's eldest grandson to oust Bismarck. This he did successfully on 18 March, 1819, when Bismarck was forced to resign by the Kaiser. This was a very big mistake. Replacing a progressive social and political genius such as Bismarck with a traumatised Kaiser, just because he was a member of the European club of unelected heads of state, may have cost the lives of millions in the century to come. Think how much richer the curriculum of our educational establishments might be today, had this blatant interference in the affairs of others, not taken place.

There was, however, another thing that the British establishment did, which was an important and a very necessary initiative, and a direct reaction to the 'Bismarck

effect'. This involved the establishment of brand new centres for technical training which focused on apprenticeships and work-place based learning schemes to help in the reformation on industrial practices and manufacturing industries through Britain and its empire. This reaction to the 'Bismarck effect' started in the early 1870's, after the unification of Germany. One of the most iconic of these new training centres was the Central Institute of the City and Guilds of London [14]. Based in South Kensington, London, this institute is now known as Imperial College. It is one of the premier scientific, technical and research establishments in the world, equal, if not greater in stature, to more traditional UK universities such as the universities of Oxford or Cambridge, at least in terms of science and technology.

Imperial College has an interesting history, in that after developing its technical training services as a City and Guilds centre, it joined London University in 1908, only to leave the university in October 2006. One of the underlying reasons for leaving, was that it wanted to go back to its City and Guilds roots. And it is these roots, that many UK higher education institutes are now destined to grow from, lest they deprive themselves and their graduates of a future. This is because the Imperial College Model is the embodiment of a Knowledge-based Economy compounded in the 'Triple Helix Concept'.

6. Knowledge economies - the triple helix concept

The Triple Helix Concept 'considers the interaction between university, industry, and government to be the key to innovation and growth in a knowledge-based economy' [2]. While the phrase 'Triple Helix Concept' is relatively new, the basic idea that it proposes is not.

One of the current underlying problems with the concept, or at least its implementation, relates to the post 1945 legacy of UK based education. This is reflected in the continued debates undertaken by the executives of universities in regard to change management, and their failure to comprehend an underlying reality, which is that the majority of university academics are not fit for purpose in regard to appreciating, let alone endorsing the Triple Helix Concept, [15, 16]. But they could be, especially if they could learn to respect it rather than fear it, and, because of their fear, hold it in contempt. This problem would quite naturally become null and void if university academics had to have experience in industry for them to be appointed to an academic position in the first place. Such a realisation can make important impacts on society, above and beyond the cloisters of the 'Ivory Tower'.

For example, in the 1920's, and, working with his former PhD student, Leo Szilard, Albert Einstein became involved in a business venture; essentially a spin-off company from Berlin University where he was working at the time. The focus of the business was to design more efficient and safer refrigerators. The business venture actually failed because of the effects of the Wall Street crash of 1929. Nevertheless, in addition to numerous patents, the nature the business, at least in terms of some of the more abstract thinking required, led to a solution to the so-called 'Maxwell paradox' in thermodynamics.

This solution was published by Szilard in 1929 in the Zeitschrift fur Physik, with a seminal paper entitled, 'On the Decrease in Entropy of a Thermodynamic System by the Intervention of Intelligent Beings' [17]. The paper is one of the most important in the history of physics, and is absolutely fundamental to the digital communications

world we live and work in today. This is because it was the very first publication to introduce the idea of Information Entropy, which is usually, but incorrectly, attributed to the American Mathematician and Cryptographer, Claude Shannon, who rediscovered it in 1948 [18]. Information Entropy is the key for estimating the minimum number of bits needed to encode a string of symbols, and therefore represents a fundamental limit as to how much information is communicable digitally in terms of a sequence of bits.

Thus, an idea that is so fundamental to our society today, and possibly the physics of tomorrow, was originally conceived through the juxtaposition of an enquiry conducted by academics in regard to an industrial problem. It is an example that lies at the heart of the Triple Helix Concept.

In this respect, just as the British government was forced to change things and develop a new infrastructure for technical training in the 1880's (as discussed earlier), history is now repeating itself, in order for the UK to comply with trends taking place overseas such as in China, for example. China has a growing technical dominance which was arguably catalysed by Deng Xiaoping, when he stated that, 'it doesn't matter whether a cat is black or white, as long as it can catch a mouse' - preferably a mouse with more than a Micky Mouse degree! In this context, there is a close synergy between the development of China now and the development of England in the 17th Century. This is explored in the following section.

7. The English reformation: a revolution in education

'I beseech you, …think it possible you may be mistaken'. So said Oliver Cromwell, one of England's most enigmatic but influential politicians. This is a statement that we should endeavour never to forget, because it provides an intrinsic resistance to the faults that pervade society, encapsulated in the 'Four Idols' of Francis Bacon, as briefly discussed earlier. Cromwell's influence and legacy is well known. However, given the remit of this material, there is an aspect of his contributions that is not as well appreciated as it should be. It is for this reason, that Cromwell's contributions to English education is now briefly addressed.

After the end of the English civil wars of the 1640's, there was continual debate on precisely how the three kingdoms of England, Scotland, and Ireland should be governed and developed in line with values that reflected the Realpolitik of the new republic. To this end, a 'Rump' Parliament was established after the conclusion of the war in September 1651. Mismanagement and corruption led to this Parliament being forcibly dissolved by Oliver Cromwell in 1653 [19]. Cromwell was declared Lord Protector in December 1653, a position that he retained up until his death on 3 September, 1658, [20].

The changes that Cromwell made in the five years he exercised full power were radical in the extreme and included a focus on the educational traditions of the time. For this was a period of disruptive thinking which inspired the development of new ideas in regard to civil order, philosophy, science and the nature of society and its prosperity. And much of the scientific and philosophical thinking was predicated on the ideas and principles conceived by Francis Bacon in the early part of that century. It is in this respect, that the most important and long-lasting effect of these times was the renaissance in English education that occurred [21].

While there were many different reasons for this renaissance (which historians continue to debate), given the social conditions of the time, it is arguable that the most

important reason was that for the very first time since the fall of the Roman empire some 1000 years earlier, education passed, in every way, from the church to the state. This is because calls for educational reform were being inspired by a desire to improve the lot of the poor, many of whom had suffered significant deprivation in the economic depressions of the 1630's. In fact, it was these economic circumstances that had contributed to the outbreak of the civil wars in the decade to follow, a fact that is a common theme throughout the history of armed conflict.

The Puritans called for a broad range of reforms including the provision of technological and agricultural education, a system of schools to educate all children, and more financial aid for deserving students. These reforms were of significant value as a means to better the status of the working classes.

This occurred at a time when England needed to find solutions to its critical financial situation; a very common theme that occurs when any society uses its treasury to finance an armed conflict. It is in this context that the Commonwealth of the 1650's embarked on the development of new wealth creation activities through international commerce. To do this, the Commonwealth needed to re-engineer its education system, focusing on a curriculum underpinned by the promotion of trade and industry. This is a situation that is not entirely dissimilar to the situation that the UK finds itself in now, following 'Brexit day' on 31 January 2020, when the UK ceased to be a member state of the European Union. In this context, Cromwell's government actively encouraged the immigration of well-educated and skilled foreign nationals, just as the UK is doing today. In the 1650's, this also included the 'readmission' of the Jews to England [22, 23].

Before the 1650's, the English education establishment was a very insular and parochial enterprise. Consequently, Cromwell introduced a comprehensive range of new Schools, Colleges and Academies in which the Sciences, Technology, Engineering and Mathematics took a precedent. This was perceived as a form of subversive criticism, causing offence to the academic establishment of the time [21].

The perceptions of the academic establishment were indeed quite correct. In respect to the economic position that England found itself in after the civil wars, Cromwell and his government were not at all satisfied with the education system that the new republic had inherited. As is the case today, English education was a reflection that was well encapsulated in one of Bacon's 'Four Idols', in particular, his 'Idola Specus' or 'Idol of the Cave' as discussed earlier. In this respect, the universities of today have become similar 'Idols' through their focus on political correctness, and the near complete irrelevance (with regard to the job market) of the curriculum that is being taught, coupled with their fear of open debate and those that dare to disturb the mediocrity of the norm.

Cromwell's educational philosophy was predicated on the philosophy of Francis Bacon. He wanted the education system in England and the Commonwealth to be transformed into one that promoted the drive for reason, literacy, science and industry. For school leavers and university graduates to be trained in agricultural practices, in ship building and the 'art' of navigation as it was then. To be proficient in mathematics and scientific philosophy, focusing on experimental verification, as well as being trained for entry into the New Model Army and Navy. In this respect, Cromwell promoted many of the Guilds to enhance training in practical skills and craftsmanship and provided improved levels of finance to help increase the number of apprenticeships.

While Cromwell and his government could not have imagined the effects of their educational reforms on the future prosperity of the land, one can observe a clear

correlation between the radical changes that were introduced in the 1650's and what later came to be known as the industrial revolution in England. Soon after Cromwell's death, his monarchist successor, Charles Stuart the Second, established many great scientific institutions such as the Royal Society which promoted an approach to education, science and literacy that Cromwell had inspired during his short role as King Oliver in all but name. Thus, the worlds first industrial revolution was in fact seeded by a vision for English education based on the scientific philosophy of Francis Bacon. It took a civil war and a new English republic to convert this philosophy into a practically realisable education system that went on to radically change Europe and the world beyond.

In a Nutshell, what Cromwell did was to drain the 'Whitehall swamp' of his time and oxygenated the pond. And the better part of this oxygenation was the education of the land; and in his time, and, for that period of history, that land was England. The most important and relevant thing to understand is Cromwell's strategy, which was not to confront but to by-pass the academic establishment. This is precisely what is going on now.

Before the English civil wars of the 1640's, England was still a relatively minor player in European affairs. It had nurtured a relatively small handful of scholars, philosophers and intellectuals that could rank with those littered throughout renaissance Europe at the time, most of whom had been educated in various European universities. However, after the civil wars, and within some 100 years of Cromwell's death, the number of English and later, Scottish born individuals, contributing to the revolutions in science, technology, and engineering grew rapidly, their contribution helping to forge the world in later centuries.

Examples of such individuals are too numerous to name, but Isaac Newton must surely rank as one of the most famous and influential who has a special place in the list of contributors to the scientific revolutions taking place at the time. Moreover, in the context of changes taking place throughout Europe in the 17th Century when new ideas were being actively encouraged to flourish in the north of Europe compared to the south, it is an irony that Isaac Newton was born on Christmas day, 1642. For this was the same day that the great Italian scientist, Galileo Galilei, died. And it was Galileo, who, after being treated so badly by his church, and placed under house arrest, that had predicted the transition that would take place in Europe after his death.

One of the reasons for this can be directly attributed to Cromwell's investiture in apprenticeships, work-place based learning and technical education [19]. It is therefore interesting to note, that this is precisely the policy that is now being pursued by the UK government. Thus, in the following section, two case studies are considered that are indicative of the future of higher education, compounded in the new age of the Technological College. They are examples of the current government's strategy, not to confront universities for what they have become, but to bypass them, and fund a new approach to Higher Education just as Oliver Cromwell did in his time.

8. New age of the technological college: Some example case studies

One of the principal goals for HE in the UK, at least in the short term, is to eradicate 'Micky Mouse Degrees'. The approach to doing this will usher in a new age of the Technological College. The emergence of such colleges is illustrative of the realisation that a university degree is not the only route to success. This is

compounded in the relatively recent announcements of plans to reform post-16 education in the UK. It is in order to give employers the skilled workforce that is now needed [24] and follows the UK government's 2019 landmark review of HE [25].

8.1 The Ada National College for digital skills

In 2014, Microsoft identified the order of 100,000 technical, programming and Information and Communications Technology (ICT) related jobs in the UK that could not be filled for lack of appropriate skills of UK graduates. This was a particular embarrassment to the UK government at that time, but it should not have come as a surprise, given the approach that has and continues to betaken by the UK university sector. As a result of Microsoft's identification, in December 2014, Prime Minister David Cameron announced the establishment of the first new college of its type since 1993. The Ada National College for Digital Skills [26] in London first opened its doors in September 2016 with the following mission statement: 'The mission of the College is to work with industry to design and deliver an institution that provides the education and support needed for all its students to progress into highly skilled, computing related roles'. The focus of this college is to provide its students with the hands-on skills required to enter the digital technologies job market.

The learning providers that work with the National College for Digital Skills are not 'academics' in the traditional university context of the word. Rather, they are industry-based experts with a wealth of practical experience in digital technologies. This ranges from basic computer programming skills to current advances in Artificial Intelligence. The College represents an example of an approach to post-16 education and training that provides an essential contribution to filling the job roles of the future associated with the so-called 'Big-data Society'.

The industries for which this approach to education has become necessary are those that are driving progress in communications infrastructure, for example, in data management and security, and financial management. Other examples, include new generation health care technologies and personalised medicine, renewable energy, and public health management. These are the subject areas that are expanding rapidly in UK. The problem is that there are currently not enough properly trained graduates to enter this job market. And yet, it is this job market that is going to be vital for developing a knowledge-based economy for which the goals of education are now being directed.

8.2 The Institute of Digital Technology at Bletchley Park

Another example of the new age of the technological college is the Institute of Digital Technology at Bletchley Park which opened its doors, as of September 2021 [27]. As with the Ada National College for Digital Skills discussed previously, the aim of this College is to focus on developing the hands-on programming and technical skills required by industry. This is achieved by the College working with the relevant industries and associated professional institutes. In this way, teaching modules and units are designed with a relevant workplace-based curriculum.

The materials are typically presented by industry based teaching consultants who are also responsible for tutoring students, i.e. learners that have typically gained apprenticeships through the earn as you learn schemes. In this way, the institute does not impose what it wants to teach as in a university. Instead, the institute enquires into want apprentices need to know to undertake their job and to develop their career. Consultants are then approached to provided the teaching and learning programmes

that are required, consultants that are experienced in the very same industries to which the apprentices are assigned and have typically been apprentices themselves.

The Institute of Digital Technology is another example that reflects the UK government's drive to by-pass the traditional university sector in terms of focus and funding. In this case, the aim of the College is to reflect the work undertaken at Bletchley Park during the Second World War. This is when mathematicians, scientists and engineers developed the bedrock of the ICT revolution. For it was at Bletchley Park that the world's very first partially programmable computer - the *Colossus* - was designed, built, and operated. This was achieved through the technical knowledge of a City and Guilds apprentice called Thomas Flowers, and not just the theoretical ideas of Cambridge graduate Alan Turing, who had previously helped to improve upon the Enigma decryption techniques developed in Poland during the 1930's. A fact that is illustrative of, and a testament to, a reality in which theoretical ideas are always strengthened by a respect of complementary technical skills.

The Institute of Digital Technology does not of course want to inhibit its customers from contributing the originality of Alan Turing. But its principal aim is to provide the technical excellence required by a society that has evolved to become reliant on the legacies of both Alan Turing and Thomas Flowers. The work undertaken at Bletchley Park during the Second World War is illustrative of the fact that both university and vocational qualifications are important and must be respected in equal measure, lest the distinctions between a university graduate and an apprentice become poisoned through a clash between fantasy and reality, respectively.

9. Further examples of new initiatives in higher education

In addition to the new age of the technological college that is emerging, there are many other industry-based and government initiatives that are now taking place. Some examples of these are now considered.

One of Prime Minister Tony Blair's greatest ambitions was for 50% of school leavers to study at university, a feat that he and his successors took some 20 years to achieve. That is now changing because of the entrepreneurial efforts of industry. This includes, rather ironically, Tony Blair's eldest son, Euan Blair, who recently announced that his education start-up company called Multiverse, established in 2016, is being designed to divert school leavers away from university into apprenticeships [28]. The company was recently capitalised with funds that are being diverted away from the university sector.

Another example is the recent pledge made by IBM to give '30 million people worldwide new technology-based skills by 2030 through local partnerships with education providers, government departments, and other organisations across 30 countries'. It is a bid to 'ensure that people of all ages have the skills needed for future roles. IBM will use both new and existing programmes alongside partner organisations to teach people a variety of technical and workplace-ready skills' [29].

This is just one of many examples, where industry is taking the lead to fill the gap between the stuff being taught at universities, and the skills needed for the workplace. With technology advancing and becoming increasingly embedded into so many parts of life, it is important that everyone is given the skills they need to navigate the digital world. This is a case of history repeating itself as IBM introduced a large-scale UK graduate re-training program established in the 1980's in order to feed the City of London with the IT expertise that it was so badly lacking at the time. The emphasis was to fast-track graduates in the 'art' of computer programming and software

engineering using a number or IBM associated trainers and an even larger complement of staff whose sole aim was to secure employment for the re-trainees.

It is in this context that the UK government is finally acting through their current 'Skills and Post-16 Education Bill' [30]. Sponsored by the Department of Education and originating from the House of Lords, the Bill is now progressing through the House of Commons. It is a Bill to make provision about local skills improvement plans relating to further education; to make provision about functions of the Institute for Apprenticeships and technical education qualifications; to consider student finance and fees and assessments by the Office for Students, and to make provision about the funding of certain post-16 education training providers. In short, it is about making provisions to counteract the effects brought about by the irresponsibility of the university sector.

10. The cause of the problem

How did UK education ever get into the state that it now is? Blaming governments, teachers and academics for the current state of education is all too easy. The material presented in this chapter is not about blame but understanding. So how can we understand what has happened? It has much to do with the changes that have taken place over the past thirty years - and very positive changes at that. These include the fall of the Berlin Wall in 1989 which was the icon for the collapse of the communist systems in Eastern Europe and the Soviet Union. The reasons for why this occurred are numerous. However, a very important reason, is a consequence of the educational provision that the communist system developed. For it produced a most remarkable transformation of society in terms of the literacy and numeracy of countless millions. Perhaps it is because of this, that the system imploded as it did. In other words, the focus on high-quality technical education that the communists coveted was perhaps the very thing that brought it all down upon their totalitarian heads.

As always, there is a price to pay even in victory. The price that the UK is now paying is a result of dismantling much of the scientific civil service and industries that were designed to maintain the status quo during the cold war. The direction of our education system has followed this understandable response to the end of that war. And besides, if high quality technical education was a reason, or even the reason, for the collapse of the system that had introduced it, would it not be sensible to compensate for such a causal incident and accommodate accordingly.

This is not of course to suggest that there is some secret think tank in Whitehall whose advice to governments has been to keep young people dumb and in debt so that they can be controlled, thereby staving off the embarrassment the Kremlin suffered in 1989. This has occurred quite organically. But in response to this occurrence, it may be that certain nation states who see fit to educate their children properly in STEM, and are consequently experiencing considerable economic growth, may have come to understand that it is in their best interests that certain other nation states are encouraged to carry on just the way they have been.

11. Concluding remarks

The current and growing problems associated with the UK Higher Education system is reflected in the numerous and detrimental statements being made by government and industry. This is compounded in what employers are constantly saying in regard to UK university graduates, namely, that 'while the cost of education to both

the state and students alike is growing, graduates are increasingly unprepared for the workplace' [30]. In this context, parents and schools alike are starting to encourage school leavers to enter the 'University of Life' through earn as you learn apprenticeships. This is an approach that should be nurtured on the basis of the following points:

i. An increasing number of universities are offering fast-track one- or two-year degree programs, predicated on an increasing recognition of and respect for a National Vocational Qualification awarded by a professional body through a technological college.

ii. These fast-track degree programs are being integrated into online learning schemes that can be undertaken in a full- or part-time mode, and as a set of short-courses, a training mode that is consistent with nature of continual professional development.

iii. The traditional lack of parity of esteem between vocational and university educational pathways is being dissipated and becoming increasingly irrelevent.

In terms of point (ii), the recent Covid-19 pandemic has forced the issue, and shown that this mode of teaching is not only possible but desirable, at least in terms of cost benefits. However, it is the third point that is the more difficult issue to resolve as it represents a deeply embedded social reality in the UK. As a result, the middle classes continue to do their children the disservice of limiting their future prosperity by being sucker to educational values that have passed their sell-by date.

Perhaps they should be encouraged to do so? This is because it will provide a new window of opportunity for the coming technically competent proletariat to influence the future prosperity of the state. It will be predicated on training provided by industry experts rather than tenured academic staff, whose mentality was moulded by a society of excess that no longer exists. And this is why more and more state funding will continue to be channelled into the development of the new technological colleges, just as it was in the 1650s, and again, in the 1880's (as discussed earlier); a case of history repeating itself in order to provide similar solutions to very similar problems.

This is reflected in the numerous, publications, reports and commentaries throughout the education sector and from professional bodies, especially in engineering. It is now clear, that while education, training, and continuous professional development are the answers to many problems facing engineering, new ways of learning are required that transcend the traditional university sector. It is accepted that while this transition will not be easy, it is absolutely necessary [31].

12. Some final thoughts: an educational philosophy for the future

In 1609, Francis Bacon wrote a book on the 'Wisdom of the Ancients' a Wisdom for which he had great respect. In this regard, and that of educational provision in its broadest spectrum, it is of interest to contemplate the following: If education based on the wisdom of the ancients, had not been interrupted for the best part of 1000 years between the fall of the Roman empire in 5th Century and its re-birth in the 15th Century, then how much more advanced might humanity be today? And if this educational provision had occurred, would humanity now be in the position that it

now is; where, for the first time in its history, it is having to contemplate the clear and present danger that exists due to the damage being done to our planet, for which humanity has only itself to blame.

In his book 'The Greek View of Life' [32], Goldsworthy Lowes Dickinson writes the following: 'With Greek civilisation beauty perished from the world. Never again has it been possible for us to believe that harmony is the truth of all existence'. It is in this context that Dickinson, dismayed by the First World War, evolved the idea of a League of Nations, his subsequent writings helping to shape public opinion towards the creation of a League of Nations, the ancestor of today's United Nations.

An icon of the Greek view of life is Athena, illuminating humanity through her quest for reason, understanding, compassion, and tolerance. This icon symbolises the primary transformation of society that is taking place in our time and will be judged as such in the future; where humanity is reaching out to the Greek view of life.

Since the Fifteen Century, Hellenism has been steadily re-emerging from the dark ages. Examples include the English Civil War discussed earlier, and the French, American and Russian revolutions. And in our times, the fall of the Berlin wall, the abolition of Apartheid, and the ongoing civil rights movements, for example. But the most important movement of all, is reflected in the recent United Nations Climate Change Conference. This is because the effects of climate change are not going to care about our trivial differences and petty disputes or our parochial identity politics. And there will be no compensation culture available to rectify the damage handed down to future generations if we do not reduce the Carbon emissions of today for the sake of tomorrow.

Some 2000 years ago, in his book 'Meditations' [33], the Hellenist Roman emperor and philosopher, Marcus Aurelius Antoninus, wrote the following: 'When you arise in the morning, think of what a precious privilege it is to be alive - to breathe, to think, to enjoy, to love'. In this context, it should be understood, that our current behaviour is digging the graves of those yet to be given the privilege of being alive. If we want to provide future generations with this privilege, then we must go back to the wisdom of ancients, embrace the Greek view of life and educate our children accordingly, lest they fail to understand the words of the great Athenian philosopher, Socrates [34]: 'There is only one good, knowledge, and only one evil, ignorance'. In this way, those who might weigh us in the balance, many years from now, may be grateful to us for providing them with a wisdom that flows from the Greek view of life, a life that forged the greatest empire of all, an empire of the mind [35].

DOI: http://dx.doi.org/10.5772/intechopen.109138

Author details

Jonathan Blackledge[1,2,3,4,5,6,7]

1 The Royal Society for the Encouragement of Arts, Manufactures and Commerce, London, UK

2 Faculty of Arts, Science and Technology, Wrexham Glyndŵr University of Wales, Wrexham, UK

3 School of Mathematics, Statistics and Computer Science, University of KwaZulu-Natal, Durban, South Africa

4 Department of Computer Science, University of Western Cape, Cape Town, South Africa

5 Science Foundation Ireland, Three Park Place, Dublin, Ireland

6 School of Electrical and Electronic Engineering, Technological University Dublin, Dublin, Ireland

7 Centre for Advanced Studies, Warsaw University of Technology, Warsaw, Poland

*Address all correspondence to: jonathan.blackledge@tudublin.ie

IntechOpen

References

[1] Santayana G. BrainyQuote, George Santayana Quotes. 2020. [Online] Available at: https://www.brainyquote.com/authors/george-santayana-quotes [Accessed: 12 August 2022]

[2] Etzkowitz H, Zhou C. The Triple Helix: University-Industry-Government Innovation and Entrepreneurship. London: Routledge; 2017. ISBN: 9781138659490

[3] Bacon F. Novum Organum. Chicago, USA: Open Court Publishing Co.; 1994. ISBN-10: 0812692454

[4] Idola Specus. 2022. [Online] Available at: https://en.wikipedia.org/wiki/Idola_specus [Accessed: 2 July 2022]

[5] Russell B. BrainyQuote, Bertrand Russell Quotes. 2022. [Online] Available at: https://www.brainyquote.com/quotes/bertrand_russell_141826 [Accessed: 7 July 2022]

[6] Boswell J. Life of Samuel Johnson. Oxford: Oxford University Press; 1970. ISBN-10: 0192810715

[7] H M Government. English Apprenticeships: Our 2020 Vision. 2020. [Online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/482754/BIS-15-604-english-apprenticeships-our-2020-vision.pdf [Accessed: 27 June 2022]

[8] Dunne P. The Know List Academies: Academies Forum. 2012. [Online] Available at: https://www.youtube.com/watch?v=vtTonOUIAcI [Accessed: 4 May 2022]

[9] Hodge M. Mickey Mouse degrees. 2003. [Online] Available at: https://en.wikipedia.org/wiki/Mickey_Mouse_degreesj [Accessed: 24 June 2022]

[10] Jacobs S. Britain's Great University Scam can't be Allowed to Destroy another Generation. London: The Telegraphy. 2022. [Online] Available at: https://digitaleditions.telegraph.co.uk/data/1068/reader/reader.html?#!preferred/0/package/1068/pub/1068/page/74/article/NaN [Accessed: 14 September 2022]

[11] Taylor AJP. Bismarck: The Man and the Statesman. London: Hamish Hamilton; 1955

[12] State Socialism (Germany). 2022. [Online] Available at: https://en.wikipedia.org/wiki/State_Socialism_(Germany) [Accessed: 4 August 2022]

[13] Valentin V. Bismarck and England in the earlier period of his career, Transactions of the Royal Historical Society. Cambridge University Press; 1937;**20**:13-30. [Online] Available at: https://www.jstor.org/stable/3678591 [Accessed: 6 September 2022]

[14] Gay H. History of Imperial College London, 1907–2007. Higher Education and Research in Science, Technology and Medicine. London: Imperial College Press; 2007. ISBN-10: 1860947093

[15] Matthews V: Are Universities Still Fit for Purpose?. London: Raconteur.net; 2020. [Online] Available at: https://www.raconteur.net/digital/aim-university-education/ [Accessed: 2 March 2022]

[16] Mann A. Universities no Longer Fit for Purpose?. San Francisco: Medium.com; 2020. [Online] Available at: https://alexander-singh-mann.medium.

com/universities-no-longer-fit-for-purpose-82a5390f3f64 [Accessed: 23 November 2021]

[17] Szilard L. On the decrease of entropy in a thermodynamics system by the intervention of intelligent beings, Zeitschrift für Physik. 1929;**53**:840-856. [Online] Available at: https://library.ucsd.edu/dc/object/bb2049336j [Accessed: 3 October 2021]

[18] Shanon CE. A mathematical theory of communication. The Bell System Technical Journal. 1948;**27**:379-423. [Online] Available at: https://people.math.harvard.edu/ctm/home/text/others/shannon/entropy/entropy.pdf [Accessed: 18 April 2022]

[19] Worden B. The Rump Parliament 1648–1653. Cambridge: Cambridge University Press; 1974. ISBN: 978-0-521-29213-9

[20] Fraser A. Cromwell: Our Chief Man. London: Orion; 2001. ISBN-10: 9780753813317

[21] Gillard D. Education in England: A History (Chapter 3). 2018. [Online] Available at: http://www.educationengland.org.uk/history/ [Accessed: 19 September 2022]

[22] Resettlement of the Jews in England. 2022. [Online] Available at: https://en.wikipedia.org/wiki/Resettlement_of_the_Jews_in_England [Accessed: 9 September 2021]

[23] Gow A C, Fradkin J. Protestantism and non-Christian religions. In: Rublack E, editor. The Oxford Handbook of the Protestant Reformations. Oxford: Oxford University Press. 2016:274-300. ISBN: 9780199646920. [Online] Available at: https://books.google.co.uk/books?id=7QiTDQAAQBAJpg=PA296#v=onepageqf=false [Accessed: 12 October 2021]

[24] Barnes B, Sellgren K. University Tuition Fees Frozen at 9,250 GBP for a Year. BBC News: Family and Education. London: BBC online; 2019. [Online] Available at: https://www.bbc.co.uk/news/education-55735178 [Accessed: 24 September 2020]

[25] Coughlan S. University Tuition Fees 'Should be Cut to 7,500 GBP. BBC News: Family and Education. London: BBC online; 2019. [Online] Available at: https://www.bbc.co.uk/news/education-48451474 [Accessed: 6 December 2021]

[26] Ada National College for Digital Skills. 2022. [Online] Available at: https://www.ada.ac.uk/ [Accessed: 2 January 2022]

[27] Institute of Technology at Bletchley Park. 2021. [Online] Available at: https://www.mkcollege.ac.uk/news/all-systems-go-for-mk-college-institute-of-technology-at-bletchley-park [Accessed: 2 January 2022]

[28] Multiverse. 2021. Available at: https://www.multiverse.io/en-GB/about [Accessed: 22 July 2022]

[29] Armonk NY. IBM Commits to Skill 30 million People Globally by 2030. 2021. [Online] Available at: https://newsroom.ibm.com/2021-10-13-IBM-Commits-to-Skill-30-Million-People-Globally-by-2030 [Accessed: 12 August 2022]

[30] UK Parliamentary Bills. Skills and Post-16 Education Bill. 2022. [Online] Available at: https://bills.parliament.uk/bills/2868 [Accessed: 4 August 2022]

[31] Flaig J. Learning curve - a special report on the future of engineering education, from T-levels to the skills crisis. Professional Engineering. Institution of Mechanical Engineers. 2022;**5**(35):21-27. [Online] Available at:

https://www.imeche.org/news/news-article/learning-curve-will-engineering-t-levels-plug-the-skills-gap [Accessed: 18 September 2022]

[32] Dickinson GL. The Greek View of Life, Project Gutenberg. 2004. [Online] Available at: https://www.gutenberg.org/ebooks/6200 [Accessed: 4 April 2022]

[33] Aurelius M. Meditations. London: Penguin Classics; 2006. ISBN-13: 978-0140449334

[34] Roldan MJ. 55 Famous Phrases of Socrates to Understand his Philosophy. 2022. Available at: https://www.recursosdeautoayuda.com/en/frases-de-socrates/ [Accessed: 23 October 2022]

[35] Blackledge JM. Knowledge Economies and the Future of Higher Education. An online Colloquium given for the National Institute for Theoretical and Computational Science. 2022. [Online] Available at: https://www.youtube.com/watch?v=jqRXbOOYlbs [Accessed: 11 November 2022]

Chapter 22

Perspective Chapter: A Systematic Study for Model Management Education toward Problem Based Learning in West Africa

Kalyan Kumar Sahoo, Raja Mannar Badur and Vaibhav Patil

Abstract

Globalization complicates West African higher education. Problem-based learning (PBL) works in many developed nations. Scholars comprehend determination difficulties better than content or thinking. Scholars work together to find the solution. Problem-based learning describes how unprofessional management students achieve these goals. West African samples were surveyed. Students, teachers, founders, and others were interviewed, read, and given questionnaires to assess their awareness, challenges, and future of PBL in higher education, particularly business schools. PBL implementation is hindered by colonized curriculum, no access limit, insufficient research funds and infrastructure investments, resource shortages, inexperienced faculty, and curricular concerns, according to data analysis. West African management education is still developing, requiring a diverse, cutting-edge approach. PBL requires community members and dedicated, trained staff. Global competitiveness seems unavoidable. West Africa will lag if it does not. Thus, the study begins the process of understanding and resolving challenges.

Keywords: problem based learning, teaching pedagogy, management education, business school, West Africa

1. Introduction

Back in the 1960s, at McMaster University in Hamilton, Barrows and Tamblyn developed the problem-based learning (PBL) technique to engage students in future ramifications. PBL is presently employed in subjects like education, mathematics, law, social studies, economics, management, engineering, and related fields [1]. The century's biggest shift in higher education is problem-solving skills [2]. Previously, evaluating PBL progress was difficult. Several African colleges and universities have recently implemented PBL into their curricula with good results [3]. Its benefits and the ever-changing higher education landscape attract many schools, particularly those with low resources [4]. Using problem-based learning encourages students to be more reflective and cooperative [5]. Most institutions and faculties have implemented

Problem-Based Learning (PBL) to make their programmes more student-centered, diverse, and professional [6].

West African countries include Benin, Burkina Faso, Cape Verde, Gambia, Ghana, Guinea, Guinea-Bissau, Ivory Coast, Liberia, Mali, Mauritania, Nigeria, Senegal, Sierra Leone, and Togo [7]. University of Cape Coast and University of Development Studies are two African universities that have implemented PBL [8]. No West African business schools or management colleges have published PBL literature, save Ghana.

A PBL in West African business schools requires some key features.

2. Problem-based learning (PBL)

Theory understands by reversing techniques [9]. They develop top-level skills including identifying and reflecting on de facto practises while mastering self-study [3]. This type of learning focuses on significant topics and investigates them [10, 11]. PBL supports immersion, scholar-focused learning, independence and navel-gazing [12]. Study environment, learner personality, and education are possible difficulties [13]. Flexible, reflective, and evaluative. Achieving these goals will help instil attributes like collaboration and sellability [4].

Problem Based Learning courses have eight components:

i. Accepting life lessons as a foundation

ii. Emphasis on graduates owning their education

iii. A point where two directions converge

iv. Theoretical and practical interweaving

v. A concentration on knowledge acquisition processes rather than goods

vi. A shift from instructor to facilitator in staff roles

vii. Students' self- and peer assessment replaces teacher evaluation of learning outcomes.

viii. Communication and interpersonal abilities

A combination of the following variants is used by Barrows in his taxonomy [9]:

i. Cases for lectures

ii. Case-study lectures

iii. Modified Case technique

iv. Closed-loop problem-based

Based on this definition, Savin-Baden [13] distinguishes problem-based learning from other techniques in three ways:

i. Incorporated programmes that focus on cognitive abilities and problem-solving

ii. A small group setting, tutorials, and active learning promote problem based learning.

iii. In addition, PBL promotes lifetime learning skills and motivation.

3. West African PBL: challenges

The biggest issue facing West African universities and institutions is funding. For many years, West African colleges and business schools have neglected management education. Despite faculty, teaching, and resource shortages, accreditation committees have accepted new schools and colleges. Free Senior High Schools are now available in Ghana and Nigeria, increasing post-secondary enrolment. Conversations in Africa's business schools/management departments have begun on open education, the British syllabi. Encountering adversity, Higher Education in West Africa is suffering [14]. Most West African countries grew rapidly in the last decade. Senegal's primary school enrolment is 79%. (WB) Across Africa, girls outnumber boys in school [15]. Several West African Universities/Colleges have only partially recovered from their crisis due to shrinking funds and rising enrollments. In West African institutions, donor-funded courses and foreign professors have plummeted. Less strain is on management education than science and technology [16].

Increasing enrolments have resulted in no entry limits. The outcome is a lack of equality and low entry qualifications in West African institutions. In West African business/management schools, the curriculum matters. West African universities prioritize profit over values. The result is a lack of creativity and joblessness. Now they need work. West Africa has a service economy. Few industries need capital. Due to a lack of government jobs, students must be self-employed so unemployment rose.

Decolonization and curriculum re-defining and re-adjusting for an African context were important difficulties that West African colleges faced early on (with mixed results). Positive responses to African social issues were required. Moving away from Eurocentric and US centric perspectives of education, knowledge, and curriculum designed by and for Africans is required [17].

West African countries have a severe dilemma as they move from passive data collection to active data use.

Traditional academic fields' analytical practices are replaced with answers to complicated problems in the new paradigm of knowledge generation [18]. Inability to tackle the challenge may also cause a shift in knowledge production methods. Developing and transition nations risk increased marginalization due to inadequate post-secondary education systems [18].

Poor research funding and infrastructure investments have plagued several universities. Former intellectual and research powerhouses are suffering. Many governments believe their tax base is too small to fund a free higher education system, while detractors argue that money earned should be used to fight corruption and excessive public

sector pay. Education is becoming more elitist rather than more accessible [19]. Lessons may be difficult. Surpasses the median family income. When it comes to financial aid, "there is a group trapped in the middle" that neither qualifies nor can afford it.

West African students may struggle to juggle schoolwork. Education is hampered by budget cuts. Employee strikes are prevalent in West Africa, delaying graduation by years. West African graduates are leaving for better paying opportunities elsewhere [20]. Workforce education has become an affluent club. Costs are outpacing salaries. They lacked suitable wage guidelines for college members.

Education is regularly straining to meet excessive teaching demands, including extensive undergraduate classrooms with administrative pressure, according to former Association of African Universities (AAU) Secretary-General Goolam Mohamedbhai [21]. West African universities are facing increased workloads and less research funding. Across the country, public universities are opening remote learning centres for business programmes. This affects enrolment and sustainability. Boko Haram terrorizes Nigerian higher education [22]. Graduation is a major issue for most colleges The key difficulties in West Africa today are finance, resources, and colonial curricula. Employers need graduates and understudies who can use data to make decisions. Competent guidance is perceived as sharp. This may be thought of it. Milgrom advocates utilizing a socio-constructivist method to define goals, prerequisites, and needs for new educational modules [23]. "Learning by doing in small groups" is part of his dynamic self-guided self-evaluated task and issue-based picking up paradigm. The basic concept of this methodology is to teach pupils new abilities. The aim is to show PBL pieces in the places below.

3.1 Defeating PBL approach obstacles in west

It was previously reported that establishing problem-based learning at West African Management Schools is tough. We will also look at solutions.

An examination of typical management college teaching approaches revealed deficiencies. Increasingly, university teachers are accused of harassing pupils, reports BBC-Africa [24]. There is a sex or money issue in several West African universities. Inequalities, sexism, and even rape are important concerns that female students face globally [19]. Fear mongering, backlogs, and harassment were overused. Aiming to prevent slow learners and repeat offenders [25], Creating terrified, passive students. These people memorized concepts and beliefs they could not challenge. In West Africa, modern education pedagogy tended to eliminate initiative, innovation, and enterprise. One approach is to use PBL to teach African real-life problems rather than textbook problems. Students in a PBL curriculum use local, contextualized indigenous business and management expertise to better their learning processes (Information and communications technology).

i. Mass education and Free Senior High School policy: Most West African countries are service-oriented. Manufacturing firms are rare. So it's a service economy. Students prefer business schools. Sadly, there are many universities that now offer business and management degrees. Due to high enrolment and the free Senior High School programme, quality instructors and support staff are rare due to high demand. Only peer learning will do here. Mass education in West Africa necessitates efficient learning. Students help other students transform by teaching them. The only option is to teach pupils problem-solving skills through problem-based learning.

ii. Poor entry qualifications and inequities: Peer learning and other non-academic skills can help 'poor' pupils perform better. This results in better learning outcomes for non-academic students, and higher completion rates for business studies.

iii. Lack of innovation capacity and unemployment: A diverse workforce improves innovative potential, says the Danish Agency for Science, Technology, and Innovation [26]. Africa's Universities and Colleges Must Innovate. To Save West African business schools lack creativity. To summarize, the National Innovation System is lacking in patents, B-school copyrights, and university management departments. Techno-management is a rare specialty. Few engineers studied business. Most MBA students are slackers who simply read cheap handouts. This creates a skills deficit. PBL fosters creativity in graduates. Educators foster critical thinking and problem-solving. This broadens the disciplinary knowledge base. This implies creating business-relevant knowledge at universities. Only then can a grad find work.

iv. Lack of resources: A PBL system is ideal when the university lacks resources. West African institutions suffer severe faculty, infrastructure, and financial issues. High enrolment and low resources plague many business schools. PBL is the only effective solution here. Peer-to-peer training may decrease wasteful costs and worker workloads. So it saves teaching and exam time. Improving trans disciplinary management research.

v. Lack of IT skills: Many universities lacked IT expertise. They do not have the IT know-how to create a Online or off, PBL may help.

vi. De-colonization: By addressing local issues rather than textbooks, it also helps build Africanized knowledge. One answer is to decolonize Business Schools.

vii. Changing perspectives: To learn to learn, transform information into new knowledge, and apply new knowledge to real-life problem-solving scenarios is stated in the World Bank report [18]. Incorporating PBL in West African colleges may assist build the African "niche" of knowledge in the global knowledge economy.

4. Summary

When teaching with PBL, students may work on problems derived from faculty members' own problem-based research. It introduces students to research at a young age. PBL in the first years of university education will thus improve student research skills sooner rather than later. Researchers may become new university employees [17]. The University for Development Studies (UDS) in Ghana uses a PBL curriculum, but the challenges are unknown [8]. PBL is rare in Africa.

Management schools must improve undergraduate and graduate business education to better engage students. Medical and health science education has never been more innovative [27]. Enhancement of higher-order thinking and problem-solving is most important [28, 29]. Active and student-centered teaching strategies help students apply their knowledge and skills in new situations [30]. PBL usually occurs after a problem is resolved. Throughout the learning cycle, teachers assist students.

5. Recommendations

The PBL is recognized as a professional curriculum that prepares graduates for the job market in these nations. Some of the PBL aspects mentioned here include learning context and learning relationships. Personal, pedagogical, and interactional perspectives are included as well. An independent thinker/learner who can draw on previous experience, interaction with one or more people, and nature to build knowledge. I'm a student for the rest of my life. Given the system's inherent difficulties, these countries must be globally competitive and implement effective strategies with limited resources. The fundamental issue with private colleges is a scarcity of qualified staff, as well as a lack of adequate salaries and technological resources.

6. A futuristic strategy

Higher education in West Africa has become more complicated as a result of globalization. Finance and infrastructure are both in short supply. Using PBL tactics necessitates the involvement of community members as well as dedicated, committed, and qualified personnel. For global competitiveness, there appears to be no other feasible option. Unless West Africa follows suit, it will be left behind. Here are some ideas to help you get out of this funk:

- Create and develop nation-building higher education to produce nationalists.
- Define market- and societal-driven national, regional, and institutional strategies.
- Full autonomy for all institutions
- To realign the curriculum toward PBL, a balanced staff-student ratio, scheduled work and evaluation, and a minimum of 50 hours per week for staff are all necessary. Make proportional paid leave a reality. No traditional exams, but ongoing planned assessment; one tutor (teacher) in charge of a group for the duration of the semester for all topics; staff should be more active in research/consultancy work to produce 20% of their compensation; deploy need-based faculty training, and so on.
- All students receive free tuition and housing (residential institutions).
- Institutions are funded by equity shares and bank loans; employed graduates pay their parent institution(s) 2.5 percent of their income; Accept public donations; 20% staff contribution via research and development, etc. Industries that are exempt from paying income tax should pay a 1% profit tax to local institutions, and so on.

DOI: http://dx.doi.org/10.5772/intechopen.108910

Author details

Kalyan Kumar Sahoo[1], Raja Mannar Badur[2] and Vaibhav Patil[3]*

1 School of Management, DRIEMS, Odisha, India

2 Faculty of Management Studies, Global Humanist University, Curacao

3 IIMS, Pune, India

*Address all correspondence to: vaibhav0222@gmail.com

IntechOpen

References

[1] Al Wadani F, Khan AR, A. Problem-based learning in ophthalmology: A brief review. Oman Journal of Ophthalmology. 2014;**7**(1):1-2. DOI: 10.4103/0974-620x.127908

[2] Savin-Baden M, Major CH. Foundations of Problem-Based Learning. UK: McGraw-Hill Education; 2004

[3] Botha M. A project-based learning approach as a method of teaching entrepreneurship to a large group of undergraduate students in South Africa. Education as Change. 2010;**14**(2):213-232. DOI: 10.1080/16823206.2010.522059

[4] Boud D, Feletti G. Changing problem-based learning. In: Boud D, Feletti G, editors. The Challenge of Problem-Based Learning. 2nd ed. London: Kogan; 1997. pp. 1-14

[5] Yew EH, Goh K. Problem-based learning: An overview of its process and impact on learning. Health Professions Education. 2016;**2**(2):75-79. DOI: 10.1016/j.hpe.2016.01.004

[6] Hmelo-Silver CE. Problem-based learning: What and how do students learn? Educational Psychology Review. 2004;**16**(3):235-266. DOI: 10.1023/b:edpr.0000034022.16470.f3

[7] Masson PR, Pattillo CA. Monetary Union in West Africa (ECOWAS): Is it Desirable and How Could it be Achieved? (Introduction). International Monetary Fund; 2001. Available from: https://www.imf.org/external/pubs/nft/op/204/

[8] Amoako-Sakyi D, Amonoo-Kuofi H. Problem-based learning in resource-poor settings: Lessons from a medical school in Ghana. BMC Medical Education. 2015;**15**(1):1-8. DOI: 10.1186/s12909-015-0501-4

[9] Barrows HS, Tamblyn RM. Problem-Based Learning: An Approach to Medical Education. Vol. 1. New York: Springer Publishing Company; 1980. pp. 1-18

[10] Barrows HS. Authentic problem-based learning. In: Teaching and Learning in Medical and Surgical Education: Lessons Learned for the 21st Century. UK: Taylor & Francis; 2000. pp. 257-267

[11] Torp L, Sage S. Problems as Possibilities: Problem-Based Learning for k-16 Education. 2ed ed. Alexandria, WA: Association for Supervision and Curriculum Development; 2002

[12] Mergendoller JR, Maxwell NL, Bellisimo Y. The effectiveness of problem-based instruction: A comparative study of instructional methods and student characteristics. Interdisciplinary Journal of Problem-Based Learning. 2006;**1**(2):49-62. DOI: 10.7771/1541-5015.1026

[13] Savin-Baden M. Problem-Based Learning in Higher Education: Untold Stories. UK: McGraw-Hill Education; 2000

[14] Teferra D, Altbachl PG. African higher education: Challenges for the 21st century. Higher Education. 2004;**47**(1):21-50. DOI: 10.1023/b:high.0000009822.49980.30

[15] The World Bank. Investing in Higher Education across West Africa. The World Bank; 2013. Available from: https://www.worldbank.org/en/news/feature/2013/07/29/investing-in-science-and-technology-across-west-africa

[16] Sawyerr A. Challenges facing African universities: Selected issues.

African Studies Review. 2004;**47**(1):1-59. DOI: 10.1017/s0002020600026986

[17] Dahms M-L, Stentoft D. Does Africa need problem based learning? Educational change in engineering education. In: Paper Presented at American Society of Engineering Education (ASEE). Cape Town, South Africa: Global Colloquium; 2008

[18] The World Bank. Constructing Knowledge Societies: New Challenges for Tertiary Education. Washington DC, USA: The International Bank for Reconstruction and Development, The World Bank; 2002

[19] Mathers I. Who Is Going to Pay for Higher Education in Africa. The Trust Project, Sci Dev Net, 2016; 2016. Available from: https://www.scidev.net/global/features/higher-education-africa-who-pays/

[20] The Unesco courier. African Brain Drain: Is there an Alternative? The Unesco courier; 2018. Available from: https://en.unesco.org/courier/january-march-2018/african-brain-drain-there-alternative

[21] Mac Gregor K. AFRICA: New Generation of Scholars Needed. University World News; 2008. Available from: https://www.universityworldnews.com/post.php?story=20081214092057738

[22] Eme OI, Ibietan J. The cost of Boko haram activities in Nigeria. Arabian Journal of Business and Management Review. 2012;**2**(2):10-32. DOI: 10.12816/0002238

[23] Milgrom E. The New Engineering Curriculum at the University Catholic of Louvain. Vol. 2002. SEFI News Winter; 2001. pp. 9-11. Available from: https://deepblue.lib.umich.edu/bitstream/handle/2027.42/94791/j.2168-9830.2001.tb00624.x.pdf?sequence=1

[24] BBC-Africa. Sex for Grades: Undercover in West African Universities. BBC Africa; 2019. Available from: https://www.bbc.com/news/av/world-africa-49907376

[25] Sandgren D, Tiberondwa AK. Missionary teachers as agents of colonialism: A study of their activities in Uganda, 1877-1925. The International Journal of African Historical Studies. 2000;**33**(2):491-493. DOI: 10.2307/220741

[26] Kristiansen M, Bloch-Poulsen J. Employee driven innovation in team (EDIT)–innovative potential, dialogue, and dissensus. International Journal of Action Research. 2010;**6**(2-3):155-195

[27] Ertmer PA. Commentary for the special issue: PBL scholarship: Building on the educational vision of Howard Barrows. Interdisciplinary Journal of Problem-Based Learning. 2013;**7**(1):157-168. DOI: 10.7771/1541-5015.1393

[28] Norhaini Mansor A, Ooi Abdullah N, Abd Wahab J, Sattar Rasul M, Nor YM, M., & Amnah Raof, R. Managing problem-based learning: Challenges and solutions for educational practice. Asian Social Science. 2015;**11**(4):259-268. DOI: 10.5539/ass.v11n4p259

[29] Yang JH, Yang B. Nursing students experiences with facilitator in problem-based. Asian Nursing Research. 2013;**7**:198-204. DOI: 10.1016/j.anr.2013.10.002

[30] Niemer L, Pfendt K, Gers M. Problem-based learning in nursing education. Nurse Educator. 2010;**35**(2):69-73. DOI: 10.1097/nne.0b013e3181ced891

Chapter 23

Perspective Chapter: Toxic Leadership in Higher Education – What We Know, How It Is Handled

Blanca Klahn

Abstract

The concept of toxic leadership has been widely addressed in management, with demonstrated effects over the performance and climate of an organization. Although in recent years work has been done to identify the main aspects of this type of harmful leadership in various areas, such as financial, military, and health environments, not much has been concluded in relation to its influence and impact in the educational area, especially in higher education. However, there are several authors who have worked to identify the main aspects that compromise those who are affected by it, concluding that toxic leadership does indeed exist in tertiary education, and due to its often hierarchical structure, it sometimes becomes difficult to make it visible enough to be able to implement enough measures to contain it. The main objective of this chapter was to review the main features literature offers about toxic leadership, focusing it on the higher education scenario. Likewise, it was also developed its impact on those who suffer from it and its incidence on motivation of teachers and students within the learning environment. Finally, it was delved into how university structure works in relation to management of human resources, investigating its impact on leadership.

Keywords: toxic leadership, higher education, academic impact, hierarchical management, behavior

1. Introduction

"Nearly all men can stand adversity, but if you want to test a man's character, give him power."—Abraham Lincoln.

Leadership in social systems has the dual responsibilities of complying to system requirements and at the same time satisfying what is needed at a local level [1]. However, toxic leadership remains as a shallow edge within leadership concept, despite the evidence indicating its effects and repercussions on people, in the both short and long terms [2–4].

One of the reasons that perhaps makes this topic remain even less explored than others in the area is because it is difficult to dismantle; affected people often find it difficult to talk about the issue, mainly due to fear of reprisals and greater stress caused by the leadership itself. However, it has been possible to verify its effects on a larger scale on the health and well-being of those affected, as well as on the organization in the long term. Although making a construct based on the various definitions of destructive leadership that exist in the literature is not easy, it has been possible to determine common characteristics and traits, which focus on the leader's own attributes and their impact on their environment. In this way, toxic leadership can be defined as summation of characteristics and behaviors within leadership that can adversely affect the outcomes of an organization or the well-being of their employees, where exists a volitional nature in the decision of harm-doing. Many authors have tried to define what makes a leader toxic, appearing multiple features that characterize it. Within these, there are mentioned traits related to abusive compliance, with a consequent decline in followers' morale, self-esteem, and performance, but, overall, toxic leadership has been openly related in the diminishment of aspects related to personal and collective well-being, having negative repercussions mainly in areas related to job satisfaction, organizational commitment, and mental health. There are other psychological aspects that may also relate to this kind of leadership, like work engagement, but there is still not enough evidence to reaffirm there is a clear impact in this aspect.

Considering all the aforementioned and in relation to the repercussions that leadership styles have on the followers, especially in the educational area, the concern is raised in this chapter to delve into how the toxic leader affects higher education management and academic results, specifically focusing on academics and their impact in their engagement and motivation. As we will see, the relationship between both can be very complex and not necessarily can be so easily related. However, determining the presence of toxic leadership may become a useful tool to develop strategies that can foster a culture of ethical leadership and early detection of potentially disruptive leaders.

2. Toxic leadership and its implications in higher education: impact and influences

2.1 Toxic leadership: searching for the proper definition

In order to understand the emergence and consolidation of a destructive leadership style in a certain environment, especially educational settings, it is first necessary to understand some basic notions regarding how leadership works. Regarding this, Ryan et al. (2021) define leadership in an exceptional way, understanding it not only as a phenomenon, but more as a process of influence, which requires a dynamic interplay between leaders and followers, within a given context, in order to achieve a certain purpose.

In this way, it is important to emphasize that leadership is developed and defined mainly by the interaction of three fundamental components: the leader him/herself, the follower, and, as Padilla et al. (2007) call it, a conductive environment. Thus, leadership becomes a co-constructed, relational and mutually influential process [5], where misleading or destructive behaviors or actions can have harmful consequences in the process and/or for those who compose it.

Having said this, the concept of the "dark side of leadership" [6], or toxic or destructive leadership, "can be defined as the summation of characteristics and behaviours within leadership that can adversely affect the outcomes of an organization or the well-being of their employees" [7]. Consequently, a relationship of leader-follower abuse is generated, in which an organizational sacrifice is visualized in the long term, despite, at first, being able to appreciate favorable operational results [8].

This harmful type of leadership is described by different terms, being recognizable mainly as toxic or destructive [2–4, 9, 10]. However, it is possible to find some common denominations and dimensions to clarify what should be understood as a toxic leader. A destructive leader must necessarily count with a "harmful behavior imbedded in the process of leading" ([9], p. 1310), in which it can be recognized into two different methods of action: or the leader invigorates the group to go after harmful goals or targets, and/or uses methods of influence. Nevertheless, it is necessary to emphasize that, regardless of the observed behavior, there must be a volitional intention in the decisions where harm-doing is involved; this aspect differentiates it from merely ineffective leadership. "Thus, destructive leadership must be intentional, as in the way the leader chooses to adopt these types of conducts, despite other valid and ethical choices" ([7], p. 3).

In an effort to understand how toxic leadership emerges and develops, various authors have delved in its traits and impact [2, 3, 9–11], but overall it can be considered as a leadership style based on the physical and emotional impairment of people, with harmful consequences for their followers at a personal and organizational level.

Toxic or destructive leaders engage in negative behaviors with volitional intention [9], covering "several distinct but related dimensions of negative leadership" ([12], p. 2), such as abusive behavior, bullying, narcissism, self-promotion, and authoritarian practices.

Several authors note the common attributes and specific behaviors that toxic leaders display [2–4, 8, 9, 13–15], which mainly implies abusive conducts, resulting in a decrease on the employer's performance, as well as in their physical and mental well-being. In relation to this, some have dedicated themselves to typifying the most common or frequent attributes to recognize within toxic leadership, finding characteristics that focus on aggressive behaviors that negatively affect a third party, directly or indirectly. Within them, we identify Pelletier (2010), who suggests eight main characteristics: attack on followers' self-esteem, lack of integrity, abusiveness, social exclusion, divisiveness, inequity, threats to security, and *laissez-faire*. According to what she describes, any of these dimensions have repercussions at a self-esteem level, resulting in a lack of integrity. On the other hand, Schmidt (2008) defines and operationalizes toxic leadership within five main dimensions, which include abusive supervision, authoritarian leadership, narcissism, unpredictability, and self-promotion.

Regarding these traits, several authors agree in categorizing narcissism as a critical part of the toxic leadership paradigm. Dominated by self-centered, dominant features, a narcissistic leader can demonstrate a "grandiose sense of entitlement, self-focus, inflated self-esteem and intense competitiveness" ([16], p. 1323), with actions triggered mainly by egotistical needs [17]. This type of leader also demands abusive obedience and is highly capable of disregarding other's needs when setting a goal, driven by a selfish need for power [2, 3, 9]. From an educational point of view, Oplatka (2017) adds that narcissistic educational leaders "might be intolerant of criticism from teachers and stakeholders" and "enjoy manipulation of others and adopt a distorted stance of reality that is reinforced by their position" (p. 5).

Although to date there are no studies that categorically conclude that this aspect is the most dangerous and determining factor in the emergence of destructive leadership, it is important to emphasize its importance in the development of a destructive leader, since it enhances an environment of dysergy in an organization.

Comprehensively, Smith & Fredericks-Lowman (2019) impeccably summarize three key elements in toxic leadership: lack of concern for the well-being of their followers, a personality that can negatively affect organizational climate, and actions motivated primarily by self-interest. Also, this leadership must be deemed as a systematic practice, as its negative outcomes extend to long periods of time [13].

The results of these behaviors are reflected not only in the organization, but also in their subordinates. Repercussions fall mainly on aspects of mental and physical health, with a direct effect on work effectiveness and commitment [15]. Both of these concepts are closely related to motivation, which plays a key role in maintaining and perpetuating a good work environment. This is an important point to consider when measuring the impact of good leadership, since the level of motivation tends to influence job performance; therefore, and as many authors reckon, job satisfaction and organizational commitment are indeed two of the aspects more affected and diminished by leader toxicity [15, 18–21]. Until recently, however, there was little evidence showing how the effects of toxic leadership could relate with other motivational traits in higher education, such as work engagement. In this way, novel investigations show that the impact over work engagement may not always relate directly to a toxic environment, especially in educational settings [7].

Within existing literature, research regarding toxic leadership has been mainly focused in areas such as military, business, and health care-related settings; nonetheless, attention toward educational organizations is not widely mentioned. Despite this, there are some important inputs such of those of Blasé & Blasé (2002), who noted that school teachers are indeed exposed to emotional abuse from their heads; furthermore, effects of such mistreatment can be extremely harmful to teachers' professional and personal lives. Aravena (2019) also records the presence of toxic leadership in Chilean primary education, introducing behaviors reported by teachers that circulate between autocratic leadership, poor communication, inconsistent behavior, and poor strategic skills. Regarding this, he adds another interesting fact to the understanding of this leadership mechanism, since, when carrying out his study, he was able to observe that the personal perception of people affected by toxic leadership does not necessarily coincide with the perception of job experience. In this way, it concludes that the most mentioned behaviors, when consulting personal impressions of destructive leadership, were autocratic leadership and poor communication; however, when they are asked to recognize what do school principals do to be perceived as destructive leaders, inconsistent or erratic behavior, and poor strategic skills are the most frequent characteristics reported, showing that perceptions of toxic leadership and real experiences do not necessarily coincide. At the same time, he reports that although personal values are more profoundly impacted on the perception of a destructive leader, when it comes to identify their perceptions over job experience, managerial aspects are the actions that most influence teachers' perceptions.

The collection of these conclusions is sometimes difficult to achieve, considering that many times these kinds of leaders become increasingly hard to unmask, due to the obstacles that exist in achieving the victim's report of this type of abusive leadership.

If the leader faces no repercussions for their behavior or manages to achieve desired outcomes without being sanctioned, it is more likely to prolong this model

over time [8]. Thus, "a toxic culture is sometimes difficult to detect from outside the organization, and for that reason often more difficult to deal with" ([8], p. 184), as once established, can be very difficult to overcome [22].

As Thoroughgood et al. (2017) explain, sometimes destructive leadership traits can become "highly functional in in situations requiring speed and decisiveness" ([23], p. 898), being associated with positive effects in the short term. In this way, there is little knowledge in explaining why, despite the clear negative impact, destructive leader behaviors are permitted not only by followers, but also by superiors or other figures in an organization.

2.2 Toxic leadership in higher education

Although there is not a large amount of evidence in the existing literature displaying the effect of toxic leadership in higher education, it is possible to say that there is knowledge of the existence of this type of leadership in this educational setting. Despite it has not yet been possible to explain with accuracy why this occurs, it is possible to elucidate it through its structure and management, which could lead to the enduring of these leaders in high positions defined by performance and efficiency.

In higher education, leadership relationships are influenced by many factors, not only related to leaders´ traits, but also by the cultural environment, such as organizational structures and hierarchies, which can enable competitive cultures [24]. In this way, Fahie (2020) highlights universities as institutions particularly susceptible to bullying, "given their decentralized organizational structures and explicit hierarchical power structures" (p. 346). Moreover, Klahn & Male (2022) attribute to quality management approaches "the emergence of policies centered on quality monitoring and market driven strategies, which can affect the worker's perception of the type of leadership under which they are directed, as 'increased attention to quality management yields opportunity costs and can meet reluctance of academics who feel these procedures are externally constructed, managed and imposed'" ([7], p. 7). This agrees with other appreciations, in which it is recognized that public institutions have adopted a shift in the way of understanding and managing higher education, with changes to hierarchical forms that determine a vertical and delimited leadership [25, 26]. With respect to this, there is also an important focus on corporate models of management and training, in which "emphasis is placed on accomplishing the mission more than how the mission is accomplished" ([12], p. 7), relating to the "lack of diverse thought when it comes to problem solving departmental or institutional financial challenges, engaging/supporting students as part of retention efforts, and innovating curriculum or student services" ([12], p. 8).

Concerning how it is possible to explain and apply these assertions to tertiary education reality, specifically in Latin America, the development of university policies and leadership styles are highly related to several changes in its structure, which have been taking place in the last three decades. This appears to have led institutions to adopt, as it has been said previously mentioned, managerial approaches, subjecting them to focus on competitiveness, increasing their internal efficiency and productivity [27]. In this way, the approach higher education had adopted has allowed an important diversification of the academic offer [28]; however, the current framework of governance is considered rigid in its structure, and "managerialism promoted by this model is strongly linked to the promotion of authoritarianism as a management mode" [24]. Understanding that this approach can normally be associated with authoritarian forms of leadership, it is possible to assume that a rigid environment

could be more likely to be considered toxic and therefore be considered as a conductive environment.

Having said this, the structure of universities in different countries of America focuses on a market scheme, concerned with developing functions of analysis and strategic planning for its positioning in higher education. In turn, its policies focus strongly on quality assurance, obliging universities to establish units with specific functions for the analysis of institutional information and the continuous evaluation of their performance, in order to ensure quality of their teaching and learning and therefore their presence in the market [28]. In such manner, this system based on obtaining determined results could facilitate a competitive and highly demanding environment, which can lead to toxic behavior on the part of those who lead teams. Many times, and due to this, not meeting the objectives can lead to situations of pressure and stress, affecting the leader, and through him, if he/she does not know how to handle it, his employees.

In addition to this, the organizational framework of universities, functioning with three main levels—strategic level, middle line, and operational level—reveals the hierarchical nature of higher education, which although it focuses on rigid structures with defined functions, is in turn diversified into a set of units that may allow the decentralization of leadership and management.

Due to these institutional diversification strategies, higher education institutions have had to adapt and professionalize their administrative structure, incorporating to universities management professionals designated to hold academic-administrative positions [29]; however, the academic area, at the middle line and operational level, faces a different scheme, since leaders who guide units in the academic area do not always have formal leadership training, insomuch as selection criteria are based mainly on experience within the area and track record. Aravena (2019) offers an explanation of this, indicating that leaders are often elected due to personal aspects, rather than their effective aptitudes in leadership practices. This evidences a gap in educational leadership, as "leadership is viewed as inspirational models with examples of *how to be* rather than *what to do*" ([13], p. 85-86).

A work environment that enables a toxic leadership style has proved to have an effect on employees, who have their goals and well-being affected. Just as in other areas in which toxic leadership has been widely studied, higher education also experiences the consequences of this kind of leadership, including increases in absenteeism and turnover [12]. Blasé & Blasé (2002) highlight this problem as a direct result of the victim's inability to have viable opportunities for recourse, as normally organizational cultures of this nature tend to turn a blind eye on these kind of destructive management practices. In turn, the victims´ complaints can result in no action from the upper-level authorities, including protection actions toward the toxic boss, or furthermore, reprisals against the victim for registering complaints (p. 679).

There are many researchers who can support these actions, in which it is explained that higher education academics often do not trust the educational system in terms of reporting harmful actions. This is mainly due to the absence of protection measures for those affected, despite the fact that institutions normally offer formal complaint channels [22].

Along with this, inefficiency in promotional systems is also reported, since they can focus on the productive result rather than on the assessment of leadership execution. In this regard, Fahie (2020) mentions how academics in Ireland report how, despite existing protocols to initiate a formal complaint against individuals, they still remain reluctant to do so due to the absence of protection measures if the identity

of the plaintiff does not remain anonymous. Moreover, Aravena (2019) adds that an important number of destructive leaders can be frequently promoted or rewarded by their organizations, so this is an aspect that needs to be further investigated.

The implications of all the above make us reflect on the counterpart of toxic leadership: ethical leadership, and how this could improve a destructive environment. "Ethical leadership, in its true sense, promotes ethical conduct by practising as well as consciously managing ethics and holding everyone with the organization accountable for it" [30]. Although some authors agree that ethical leadership has not yet been sufficiently discussed and developed in the area [30], it could be considered as a valid mechanism that could detect a toxic leader in an early stage and thus contemplate the necessary measures to prevent its emergence.

However, understanding that ethics links to morality, it is important to point out that morality is socially derived, and as Male (2012) explains, "what is sometimes acceptable to one society is not always universally acceptable."

Keeping this in mind, "the ethical issue is to determine whether the subsequent chosen courses of action are morally and philosophically acceptable" ([1], p. 200).

Hence, an ethical leader should demonstrate an appropriate ethical behavior, influencing followers through the promotion of adequate interpersonal relationships, communication, and ethical decision making, for being able in effect to predict positive outcomes in a working environment, such as job satisfaction, willingness to extra effort in the work, report problems to management, and increased perceived effectiveness of leaders [30]. Along with this, it is also recognized that a leader's behavior not only impacts the follower's well-being, but their own behavior *via* modeling, which contemplates practices that include imitation, observational learning, and identification [31]. "Therefore, credibility, legitimacy, and attractiveness of ethical supervisors as role models can stimulate individuals to model their behaviour" ([31], p. 78). Taking this into account, it becomes important not only to investigate the effects of character attributes, but also "to construct an understanding of how negative effects of traits can emerge and be prevented" ([13], p. 85).

Brown et al. (2005) refer to the importance of organizations expressing and reflecting development and monitoring policies of ethical leadership, giving some recommendations such as emphasizing care in the selection of qualified personnel. However, throughout literature there is no evidence or proposals of how this can be properly monitored, and given the implications that this can generate, it becomes necessary to suggest or consider the need for a formal framework of supervision, which may prevent the emergence of toxic leaders and therefore ensure an ethical leadership practice.

In conclusion, as Ryan et al. (2021) summarize in their study, there exists several factors by which a destructive leadership environment could be enabled in an educational environment. In this regard, the most important to consider would be the hierarchical structure and organization of schools or universities and the prevailing power relations in favor of those in authority, the nature of the specific leader–follower relationship and the sociological and psychological susceptibility of some subordinates to the behaviors and actions of the leader, or the deficiency of moral parameters or little applicability of social norms that determine the leader's behavior and actions (p. 70).

2.3 Toxic leadership's impact in academic performance and motivation

Available literature supports the negative impact of toxic leadership on people, specifically at work and personal levels. The consequences of its endurance over

time have been extensively analyzed [4, 6, 9, 10, 15, 17, 21, 32], and some studies have noted the different strategies that victims apply to cope with and overcome the oppressive and debilitating style of this leadership model [10, 20]. The most frequent and undesirable repercussion relies mainly on evading rather than confronting the leader, with determinant consequences such as leaving the organization, taking leave, and/or bypassing the leader [20]. However, other aspects such as work commitment have not yet been extensively explored, nor how toxic leadership could have any real influence on academic motivation, which in turn can have direct consequences on students learning. In relation to this, Hargreaves & Fullan (2012) affirm that educational work is firmly linked to a strong vocation and therefore motivation for teaching, so destructive leadership could sometimes not be enough to abandon this adverse environment. In the case of academics in higher education, this aspect becomes particularly relevant, since the majority do not have formal education in the pedagogical area; however, they choose to engage in education and possibly endure in it because of the same reason [33].

Conclusions reached in literature are, however, contradictory: For example, in the study, we carried out jointly with Male (2022), it was observed that "a relationship between the degree of toxicity of the leader and the level of engagement was not identified. Contrary to the expected result, despite the existence of average to high perceptions of toxicity in the work environment, none of the lecturers surveyed reported a decrease in their commitment" (p. 13). On the other hand, authors such as Hadadian & Sayadpour (2018) disprove this result, by identifying in their study a direct relationship between toxic leadership and job stress, which results in conflicts at individual and collective level [34]. In addition to this, Schmidt (2014) also reports an inversely proportional relationship between toxic leadership and other job outcomes, such as job satisfaction and organizational commitment. Finally, Fahie (2020) also complements these assertions, indicating how could productivity be negatively affected by destructive leadership.

Although these last results contrast with the first study mentioned, it is still important to establish that, although engagement is not an aspect that has been further investigated, it is still considered related to the concepts of well-being and mental health.

Explanations for this result may be difficult to elucidate, but there can be interpretations to understand the behavior of the findings. Firstly, it is important to consider the significance of callings or vocation on work-related outcomes, as "experiencing a calling to a particular career is likely to lead to one to become committed to that line of work" ([35], p. 216). Contrary to what happens in the pedagogical career, academics in higher education are not professionals trained entirely for teaching, but are also dedicated to working in their discipline; due to this, many decide to engage in the area essentially for vocational purposes. At the same time, it is important to emphasize that academic professionals do not necessarily tend to have an exclusive bond with the institution they work for, so this could be added as another justification for why they could labor more toward the objective than for the leader who directs them [7]. Considering this, they could be more willing to withstand and perpetuate in adverse environments.

Also, it must be acknowledged that perceptions and real experiences of this harmful leadership style may not always coincide; or, in other words, toxic leadership behaviors are not necessarily attributable to work experience (including work engagement) directly, since, as it has been said before, in the perception of destructive leaders, the personal and emotional component has bigger impact than management aspects [13].

Work satisfaction is a complex perception that includes many aspects, among others, the leader's performance. As Schmidt (2014) recognizes, although many times the intentions of deserting a job are associated with the relationship between the leader and the affected, some other times it is totally unrelated. This reaffirms the importance of individual perception, which can vary from one individual to another in a very relevant way.

Finally, it cannot be left aside the importance of the rigid administrative structure that commands universities, which can also influence the degree of motivation of an academic, even in the face of a toxic or destructive environment. As indicated above, higher education institutions often work within a hierarchical framework, where leadership tends to be rigid in environments where there is not necessarily a horizontal and direct interaction between high leaders and the academic staff. Due to this, it is possible that, despite a bad leadership, professors tend to remain in their positions, since they do not directly channel their concerns with those who are responsible for creating a harmful work environment.

Taking all this into account, it is possible to say that interactionism turns out to be a key aspect to define the relevance of a relationship, both personal and work. According to Blasé and Blasé (2012), any interpersonal relationship is generated and modified through a subjective interpretive process, pushed by personal meanings according to the person, their context, and the environment in which they unravel. "Therefore, if the interaction with the leader is poor, negative appreciations may not necessarily have implications for academics' performance in the classroom" ([7], p. 14).

As with other aspects, such as the impact of toxic leadership according to the victim's susceptibility, the available evidence does not allow us to generate further conclusions in this regard, since although the traits that are diminished with this kind of leadership are clearly consensual, they are little associated with the context of those consulted. In other words, it is known that toxic leadership significantly decreases job satisfaction or organizational commitment, but it is not contextualized in terms of who is most likely to suffer these dismays. This is very relevant to consider, when defining intervention strategies and good practice policies, since if the profile of the most frequently affected academics is not fully known, it becomes more complicated to study the development of the toxic leader in their setting.

3. Conclusions

There is a widespread consensus on the importance of good leadership in work groups, especially in the educational area. In this regard, different studies have investigated the different aspects that characterize good management, focused on both managerial and personal aspects. Considering this, it can be concluded that these last traits are the ones that have the greatest impact on followers, since they define not only their quality of life, but also their performance and commitment, and with it, the results in the organization.

As has been reviewed, leadership is understood as a dynamic and interactional process, where performance results depend not only on the leader, but also on the people that compose the team, and the context in which the group is inserted.

It is well known and agreed the repercussions that toxic leadership has in a person's well-being, which usually relate to aspects compromising their mental health and work commitment [4, 9, 20]. However, other aspects that can also have an impact,

especially in the educational environment, must not be neglected. In this regard, the effects of toxic leadership on work engagement have been investigated, but there are no conclusive aspects that indicate there is a direct relationship.

Higher education is not an area of vast knowledge and evidence regarding toxic leadership. Nonetheless, it is possible to recognize some studies that validate it in the environment, but there is not enough proof to indicate the reasons why it emerges, nor how it is managed when it is detected.

In this regard, it is possible to conclude that there is a consensus in establishing that the hierarchical structure and top-down management styles can, as a context, facilitate the emergence of a toxic leader. In relation to the permanence over time, no objective reasons are acknowledged as to why it happens, but the scarce protection measures for victims who report abusive or destructive situations, and the lack of monitoring in the leadership within the area, are the most mentioned causes of maintenance over time.

Taking into account that not all people deal in the same way with harmful or traumatic events, having a clear idea of how the leader affects the performance of a worker at the moment is essential to establish adequate intervention strategies.

There are still many aspects to be developed within toxic leadership in education, especially in that related to university settings. As a conclusion, it can be affirmed that toxic leaders do have an impact on academics, although it is not necessarily related to their degree of dedication to work. Therefore, more background and future research is needed in which the implications of leadership styles on academics' motivation, engagement, and well-being can be developed more deeply, through long-term studies, which may contemplate not only the victim's appreciation. Finally, it becomes necessary to implement new policies that can ensure control of the appropriate performance of the leader, beyond the achievement of results of the institution's goals, such as monitoring mechanisms or permanent evaluations from both superiors and subordinates to the performance of an assigned leader.

Conflict of interest

The author declares no conflict of interest.

Author details

Blanca Klahn
Andrés Bello University, Concepción, Chile

*Address all correspondence to: blanca.klahn@unab.cl

References

[1] Male T. Ethical leadership in early years settings. In: Palaiologou I, editor. Ethical Practice in Early Childhood. 1st ed. London: SAGE Publications Ltd.; 2012. pp. 197-207

[2] Lipman-Blumen J. The Allure of Toxic Leaders: Why we Follow Destructive Bosses and Corrupt Politicians – And How we Can Survive Them. New York: Oxford University Press; 2005

[3] Padilla A, Hogan R, Kaiser B. The toxic triangle: Destructive leaders, susceptible followers, and conducive environments. The Leadership Quarterly. 2007;**18**:176-194

[4] Pelletier K. Leadership toxicity: An empirical investigation of toxic behaviour and rhetoric. Leadership. 2010;**6**(4):373-389

[5] Ryan P, Odhiambo G, Wilson R. Destructive leadership in education: A transdisciplinary critical analysis of contemporary literature. International Journal of Leadership in Education. 2021;**24**(1):5783

[6] Craig B, Kaiser R. Destructive leadership. In: Rumsey M, editor. The Oxford Handbook of Leadership. Oxford Handbooks Online. Oxford: Oxford University Press; 2012. Available from: https://www.oxfordhandbooks.com/view/10.1093/oxfordhb/9780195398793.001.0001/oxfordhb-9780195398793-e-25 [Accessed: May 12, 2021]

[7] Klahn Acuña B, Male T. Toxic leadership and academics' work engagement in higher education: A cross-sectional study from Chile. Educational Management Administration & Leadership. 2022:1-17

[8] Craig I. Toxic leadership. In: Earley P, Greany T, editors. School Leadership and Education System Reform. London: Bloomsbury; 2017. pp. 182-190

[9] Krasikova D, Green S, LeBreton J. Destructive leadership: A theoretical review, integration, and future research agenda. Journal of Management. 2013;**39**(5):1308-1338

[10] Pelletier K. Perceptions of and reactions to leader toxicity: Do leader-follower relationships and identification with victim matter? The Leadership Quarterly. 2012;**23**:412-424

[11] Schmidt A. Development and Validation of the Toxic Leadership Scale [Master of Science Dissertation]. College Park: University of Maryland; 2008

[12] Smith N, Fredricks-Lowman I. Conflict in the workplace: A 10-year review of toxic leadership in higher education. International Journal of Leadership in Education. 2020;**23**(5):538-551

[13] Aravena F. Destructive leadership behavior: An exploratory study in Chile. Leadership and Policy in Schools. 2019;**18**(1):83-96

[14] Blasé J, Blasé J. The dark side of leadership: Teacher perspectives of principal mistreatment. Educational Administration Quarterly. 2002;**38**(5):671-727

[15] Mehta S, Maheshwari G. Consequence of toxic leadership on employee job satisfaction and organizational commitment. The Journal- Contemporary Management Research. 2013;**8**(2):1-23

[16] Hogan R, Hogan J. Assessing leadership: A view from the dark side.

International Journal of Selection and Assessment. 2001;**9**:40-51

[17] Oplatka I. Irresponsible leadership and unethical practices in schools: A conceptual framework of the 'dark side' of educational leadership. Advances in Educational Administration. 2017;**26**:1-18

[18] Alonderiene R, Majauskaite M. Leadership style and job satisfaction in higher education institutions. International Journal of Educational Management. 2016;**30**(1):140-164

[19] Fitzgibbons K. The Relation between Toxic Leadership and Organizational Climate: An Investigation into the Existence of Toxic Leadership within an Organization and the Effects those Toxic Elements Have on Organizational Climate [Doctor of Philosophy Dissertation]. Indiana, United States of America: Indiana Institute of Technology; 2018

[20] Webster V, Brough P, Daly K. Fight, flight or freeze: Common responses for follower coping with toxic leadership. Stress and Health. 2014;**32**:346-354

[21] Schmidt A. An Examination of Toxic Leadership, Job Outcomes, and the Impact of Military Deployment [Doctor of Philosophy Dissertation]. Maryland, United States of America: University of Maryland; 2014

[22] Fahie D. The lived experience of toxic leadership in Irish higher education. International Journal of Workplace Health Management. 2020;**13**(3):341-355

[23] Thoroughgood C, Padilla A, Hunter S, Tate B. The susceptible circle: A taxonomy of followers associated with destructive leadership. The Leadership Quarterly. 2012;**23**(5):897-917

[24] Sisto V. Managerialismo, autoritarismo y la lucha por el alma de la gestión: el caso de las últimas reformas en políticas de dirección escolar en Chile. Rev. FAEEBA. 2018;**27**(53):141-156

[25] Bendermacher G, Egbrink M, Wolfhagen I, Dolmas D. Unaravelling quality culture in higher education: A realist review. High Education. 2017;**73**:39-60

[26] Waters J. The toxic university: Zombie leadership, academic rock stars, and neoliberal ideology. British Journal of Sociology of Eduaction. 2018;**39**(5):729-732

[27] Guerrero P. Estructura organizacional de las universidades en Chile. Oikos. 2007;**23**:7-33

[28] OECD. Reviews of National Policies for Education: Quality Assurance in Higher Education in Chile 2013. Reviews of National Policies for Education. Paris: OECD Publishing; 2013. DOI: org/9789264190597-en

[29] Scharager J. Quality in higher education: The view of quality assurance managers in Chile. Quality in Higher Education. 2018;**24**(2):102-116

[30] Toor S, Ofori G. Ethical leadership: Examining the relationships with full range leadership model, employee outcomes, and organizational culture. Journal of Business Ethics. 2009;**90**(4):533-547

[31] Nejati M, Shafaei A. Leading by example: The influence of ethical supervision on students' prosocial behavior. Higher Education. 2017;**75**(1):75-89

[32] Bell R. The Dysfunction Junction: The Impact of Toxic Leadership on Follower Effectiveness. Doctor of Philosophy in Organizational Leadership

Dissertation. Virginia, United States of America: Regent University; 2017

[33] Hargreaves A, Fullan M. Professional Capital. Transforming Teaching in every School. New York: Routledge; 2012

[34] Hadadian Z, Sayadpour Z. Relationship between toxic leadership and job related affective well-being: The mediating role of job stress. European Online Journal of Natural and Social Sciences. 2018;7(1):137-145

[35] Duffy R, Dik B, Steger M. Calling and work-related outcomes: Career commitment as a mediator. Journal of Vocational Behavior. 2011;**78**:210-218

Edited by Lee Waller and Sharon Kay Waller

COVID wrought havoc on the world's economic systems. Higher education did not escape the ravages brought on by the pandemic as institutions of higher education around the world faced major upheavals in their educational delivery systems. Some institutions were prepared for the required transition to online learning. Most were not. Whether prepared or not, educators rose to the challenge. The innovativeness of educators met the challenges as digital learning replaced the face-to-face environment. In fact, some of the distance models proved so engaging that many students no longer desire a return to the face-to-face model. As with all transitions, some things were lost while others were gained. This book examines practice in the field as institutions struggled to face the worst global pandemic in the last century. The book is organized into four sections on "Changing Education", "Education in the Pandemic", "Sustaining University Education", and "Embracing the Future in a Global World". It presents various perspectives from educators around the world to illustrate the struggles and triumphs of those facing new challenges and implementing new ideas to empower the educational process. These discussions shed light on the impact of the pandemic and the future of higher education post-COVID. Higher education has been forever changed, and higher education as it once was may never return. While many questions arise, the achievements in meeting and overcoming the pandemic illustrate the creativity and innovativeness of educators around the world who inspired future generations of learners to reach new heights of accomplishment even in the face of the pandemic.

Katherine K.M. Stavropoulos,
Education and Human Development Series Editor

ISSN 2755-9513
ISBN 978-0-85014-242-6
9 780850 142426

Published in London, UK

IntechOpen