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Narrative Transmedia

Edited by Beatriz Peña-Acuña

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Meet the editor

Beatriz Peña-Acuña enjoys discovering scientific and human aspects of reality. She is an assistant professor accredited by the Spanish Quality Agency ANECA (2015). She teaches in the Faculty of Education of the University of Huelva. Her interests are Hispanic philology, and she has a diploma in religious studies and journalism. She has produced several doctoral theses, and has an extraordinary doctorate award (2012) with European mention in English. Her scientific production is prolific. Beatriz is an expert evaluator of Erasmus plus programs in the SEPIE agency. She participates as a reviewer in several journals of impact. She has visited several international universities (New York University, UEA, University of London, etc.). She also gives international conferences and has been awarded the President's Lifetime Achievement Award (2015), and received an Honoris Causa from UFA University (Russia, 2016) and Catholic University of New Spain (USA, 2019).

Contents

Preface

This book is a collection of various manifestations on the transmedia narrative and some of its possible applications. First, in the introduction, a zenithal view of the phenomenon is given. Second, focus is given on one of the qualities that transmedia narrative brings, interactivity. Third, one of the innovative approaches to transmedia narrative such as mindfulness is described. Fourth, two innovative educational experiences have been analyzed that are also combined with an intelligent strategy, the appropriate teaching methodologies. All these texts can provide innovation to readers, teachers, students, and the general public.

The transmedia narrative is a format that will renew interest in reading and stories, and also allow innovation in various educational fields, if you know how to apply and combine with innovative teaching methodologies that support and encourage play. The transmedia narrative offers a new educational and communicative landscape in a society that is discovering the possibilities offered by platforms and new digital narrative formats. This book is written by creative authors and contains many examples of innovation through transmedia narrative.

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Section 1

Introduction to the Transmedia Stage

Chapter 1

Introductory Chapter: Narrative Transmedia as a New Social and Cultural Phenomenon

Beatriz Peña-Acuña and Alba Maria Martinez Sala

1. Introduction

Narrative is a genre that is incorporated into the cognitive form of the man who understands his own identity through the stories he keeps in his memory. Narrative is also part of how man is grouped socially. It also ends up giving an interpretation of historical memory about the events that identify it as a group. Narrative is a primordial way of ethical and aesthetic learning. Narrative is one of the ways in which man tries to understand the world and survive individually and in groups. That is why the ways in which the narrative appears change, but the attraction for it is constant.

The transmedia narrative is the product of the evolution of the narrative with the possibilities offered by new technologies. It is also favored by the mentality of the receiver that is more participatory and feels more protagonist in this century.

2. Narrative transmedia a polyhedral product

For years, we have studied the transmedia relationship of literature adapted to film as is the case of the film production Steven Spielberg [1–4].

From the literary theory, authors as Garrido Dominguez [5] work to analyze the different and numerous phenomena and schools that arise in the narrative environment.

We agree with Frontera's [6] assertions in her book *The Narrative Transmedia: Interactive Proposals to Work in the Classroom* ([6], pp. 37–39) which highlights the benefits of transmedia narrative in an educational environment from a constructive and participatory model, meaningful learning, zone of proximal development, active methodology, learning by discovery, cooperative, dynamic and communicative learning, dialogue, and multiple intelligences, as well as Frontera highlights that narrative transmedia contributes to media literacy too ([6], pp. 41–47).

Regarding business and communication, once upon a time a revolutionary stage in which communication lived constant changes derived from a new individual who had the necessary tools to exercise an active role in organizational and business communication processes, as well as in the design and development of brands, products, and services. Under their new roles as prosumers or adprosumers, individuals had become the key to business success because only those organizations that listened to them, conversed with them, and related to them could survive in that market.

We are faced with a market full of identical products and services from an objective point of view, which makes it very difficult to differentiate when it is more

necessary than ever. It is precisely seeking this differentiation that the world of business communication information and reason has been gradually displaced by stories and hearts. We need to create brands that thrill and brands with their own personality that consumers want to integrate into their day to day because they satisfy them beyond the mere fact of consuming them. For this, it is necessary to subordinate the traditional information and promotion objectives to the establishment of relationships and of emotional bonds from the experience of satisfactory, unique, and surprising experiences with the brands and/or with other people in relation to them.

In this context, a whole universe emerges around the transmedia narrative in response to these new needs of organizations.

The transmedia branding communicative model favors this connection or emotional bond by integrating the characteristics and values that define the personality of the brand in an own narrative that is born with the intention and the need to be developed and extended by the individuals while providing them with an experience only. It is precisely this possibility of participating and interacting that contributes to the development of the narration of the brand, the great difference of the transmedia narrative with respect to other forms of communication with which it is frequently confused. The transmedia narrative goes beyond cross-media, multimodal or multiplatform communication, and, consequently, the diffusion of the same message through different channels. Even when the channels are structured and complemented in such a way that each of them makes a particular contribution to the dissemination of the narrative, we are still far from an authentic transmedia narrative. In this, the traditional viewer becomes part of the story becoming a narrator more that contributes to its development and dissemination. Here lies the great value of transmedia narrative regarding the expectations of prosumers or adprosumers and the need for brands to make them experience satisfactory experiences as an essential key to the establishment of a long and beneficial relationship between them.

The current consumer demands unique and authentic experiences and permanent interaction with brands and other individuals in relation to these. Under these premises and the focus of the transmedia narrative, brands focus their efforts on stimulating and encouraging the experience of experiences, encouraging the participation of consumers in the development of their story and in its diffusion through multiple channels. In short, it is about brands, like people, having their own history, a story that highlights their most outstanding features and values and that, like any other story, is not written, but written day by day from the relationships and experiences lived. His narrative must act as a trigger for an experience that, when propagated, contributes to the development of one's own history. In this sense, the emergence of digital media has largely determined the rise and prominence that transmedia narrative is experiencing by multiplying its potential exponentially.

The web 2.0 model and, with this, the wide range of channels from which individuals, in their roles of prosumers and adprosumers, can participate and disseminate stories have opened up a world of possibilities for transmedia narrative understood as narration that is related through multiple means with the purpose of creating a unique and coordinated entertainment experience. However, we must not forget the advantages and benefits offered by the combination of these channels with traditional communication tools or techniques. Among all of us let us dedicate the following lines to one in particular: events, because of their affinity with the essence of transmedia narrative. An effective event starts from the narration of a story that acts as the axis around which each and every one of the elements thought and designed is integrated so that together they provide a unique experience to their assistants, an experience that they experience in the first person and that when it is satisfactory they feel the need to share. The events have always had a transmedia

character, and even before the arrival of the web 2.0 model, and with this one of the golden ages of the transmedia narrative, one of its objectives was that its assistants contributed to the extension and diffusion of the story and lived experience in the event through the channels and means available then: the traditional word of mouth and, in a few cases, conventional media. Obviously, the scope of this process has reached a new dimension after the arrival of the web 2.0 model under which any individual can click to share the experience lived with thousands, millions of people, contributing to the extension and development of the narrative and to the emergence of a transmedia event. Whether through an event or any other forms of communication, the transmedia narrative must take advantage of a reality in which relationships are generated and developed in collaborative spaces, virtual communities on the Internet in which individuals or users are not limited to receive information, but they process it, and re-disseminate it apprehended or reinterpreted, contributing its personal and professional baggage, its experiences, its knowledge, etc. And what is more important, it is not just that they can do it, but that they are desirous of it.

In the field of organizational communication, events, advertising, etc., conceived as unique entertainment, experiences can be the origin of a transmedia universe. Whatever the chosen technique or tool, only the true transmedia dimension will be reached when the audiences to which the communication is directed interact with and in relation to the brands through multiple channels from which they are offered different contents in relation to a story about which they are encouraged to deepen and participate in order to expand it. Based on the above and the possibilities opened by the digital context, the first of the great challenges presented by the transmedia narrative is to ensure that each medium or platform makes a valuable and exclusive contribution to the narrative universe, enhancing its experiential capacity and, in consequently, its advantages with respect to the construction or development of the brand. When the contents disseminated by the brands are mere replicas or adaptations to the characteristics of each medium, the active and collaborative construction of the transmedia universe, the main attraction element of the transmedia public, is hindered.

The second challenge focuses on the nature of communication that must evolve from unidirectionality to multidirectionality in order to fully exploit the possibilities offered by the web 2.0 model and the advantages of the synergy resulting from the convergence in the same space of content generated by the brands and by the users. Brands must pay attention to a new individual empowered by the web 2.0 model that claims not only to be heard (prosumer and adprosumer) but, above all, to be able to collaborate in the creation of the transmedia narrative universe that surrounds the brand and what the community has built as pointed out by Costa Sanchez and Piñeiro Otero ([7], p. 123): "Their role in the evolution of history must be increased in order to ensure that identification and involvement in history become an authentic immersion."

From the understanding and acceptance of the new consumer, we understand that the communication of the brand whatever the technique or chosen tool must be integrated into a strategy designed under the premises of the transmedia narrative in line with the expectations and demands of this new audience. Thus, transmedia communication must be developed from a narrative that serves as a guiding thread so that each and every one of the brand's messages contributes to the development of a unique, surprising history centered on those characteristics and values of the brand that are of greatest interest they awaken in the audience we are addressing.

This story branches out in each of the messages, and the diffusion supports in a surprising and unprecedented way and enhances the synergies between each and every one of them in favor of the story to be told. For this, it is crucial that each

medium make its own contribution to the narrative in such a way that it supposes an exclusive and valuable contribution and that it encourages the participation and collaboration of the public in the construction and development of this. It is ultimately about promoting unique experiences and multidirectional communication through multiple channels with the purpose of maximizing the scope of the experience through its dissemination in a coordinated manner.

It is likely that many think that the transmedia narrative is a passing fad that will be forgotten along with other models and communication techniques that, despite the triumphs harvested not so long ago, have been relegated by new formats resulting from a new individual and a new society with new possibilities and new demands. However, despite the inexorable evolution of both, there is a feature of the transmedia narrative that allows us to say that it will survive over time adapting and changing according to the circumstances of each era as it has been doing since ancient times. Quoting the great narrator Mario Vargas Llosa [8] (letraslibres.com):

> *Inventing and telling stories is as old as talking, a task that should have been born and grow with language, when grunts, murmurs, gestures and grimaces, our ancestors, those primitive beings, no longer apes but not yet human, they began to exchange words and to understand each other according to an elementary code that over the years would be subtilized to great extremes of complexity.*

Likewise, we encourage you to continue building this story about the transmedia universe initiated by a group of teachers, researchers, and professionals in the field of education, communication, arts, etc., through their criticisms, contributions, comments, etc., because the transmedia narrative arises without doubt in response to the new needs of organizations but also drawing a new horizon full of opportunities, challenges, and stories to tell so that professionals, teachers, and researchers in the field of communication continue falling in love every day a little more than our profession.

As a conclusion, it is true that since its inception the human being has felt and feels the need to tell his story or simply stories with the same objective: to teach entertainment; what has changed are the forms, the possibilities, and the scope of the dissemination of the narrative. The participation or interaction of the receiver is an ingredient that enhances and consolidates narrative transmedia attraction socially and culturally even more.

This chapter, in which we have shown those polyhedric edges, conforms, as it could not be otherwise, a captivating narrative about the transmedia universe that we hope awakens and maintains its attention by providing an experience as extraordinary as the one we have lived by reading it and collaborating in its development.

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Section 2

Transmedia Storytelling Interactivity

Chapter 2

Interactivity in Fiction Series as Part of Its Transmedia Universe: The Case of Black Mirror: Bandersnatch

Begoña Ivars-Nicolas and Francisco Julian Martinez-Cano

Abstract

The special episode *Black Mirror: Bandersnatch* (Brooker and Slade, 2018) is one of the few interactive experiences that can be found in a fictional series episode. Interactivity, as a generator of transmediality, can be considered in two ways: interactivity with respect to content, content interaction, when contributions, recognized and/or rewarded, are interventions by the user but directed and controlled, without intervening the main plot of the piece, and influential interactions, which can influence the course of history. This text studies how the use of interactivity in *Bandersnatch* contributes to generate a transmedia universe of the chapter, as well as the series.

Keywords: Black Mirror, content interaction, fictional series, transmedia storytelling, touchpoints

1. Introduction

The way in which audience consume audiovisual content has been transformed in recent decades. In this text we highlight two reasons mainly. On the one hand, the viewer has evolved by demanding personalized and participatory content, and, on the other hand, consumer devices of the moment are mobile and interactive [1]. The consolidation of platforms that offer online content on demand through streaming has displaced the traditional concept of television. From watching television in group in front of the device and in a passive way, now individual consumption is imposed through multiple media and mobile screens that allow interaction with the pieces. Television contents can be viewed on traditional television or by accessing cybermedia or distribution platforms on the Internet from a computer, smart tablet, smart phone, or smart TV.

This technological development has meant an important advance regarding the viewers. They have become users and producers of content that demand to be part of the narrative process. One of the main strategies for creating innovative storytelling is based on devising ways to involve the viewer actively in the development of the story. However, it should be noted that the involvement of the viewer in the creation of the audiovisual story is not a novelty. In 1999, the term spect-acteur [2] was used to refer to an active spectator in the construction of history.

The challenge is to seek and experiment with the way of telling stories so that they break with the linearity of the story and involve the receiver and immerse him in the universe of fiction or nonfiction that is shown to him and he wants to be part of it. Interactivity acquires a fundamental role in this challenge. The interactive narrative offers the user some open contents, audiovisual fragments, that are meant to be reconstructed by the audience [3]. García [4] calls these hypernarrative structures when they are built based on a double layer, the first that affects the interface through which the user accesses to the content and the second that influences the content itself. That is to say, the spectator stops being passive in front of the story and is given the power to select itineraries at certain moments of the storyline, forming his own organization and setting up his own story. The audiences have the possibility to choose their own montage of the narrative from the offers of the field of production, in a (re)personal interpretation of the story [5]. For Manovich [6], the temporary montage can be used to generate a sense of presence in a virtual space, experimenting with the meanings of the individual shots and altering them following the example of Kuleshov or building new meanings from isolated fragments. In this sense, Vertov [7] argues that montage can influence the indexed nature of cinema and can propose pieces that, ordered in another way, offer meanings totally far from reality.

The power to choose which option to follow is controlled by the author of the piece that has previously designed the possible itineraries. In addition, in some cases, without the intervention of the user, the story cannot continue. All this implies a whole lot of work to devise and make a story with several possibilities in its development, in order to offer these alternatives to the user. The intervention of the spectator can be carried out from outside the story, as a reader-author (lectoautor) [8], or from within as a character (avatar or immersion). The term reader-author [9] refers to the interaction of the user with the cultural product, always in a controlled manner by the author of it. The creator gives the reader the power to conduct the text or the audiovisual wherever he wants, but he always marks the route.

Interactivity, focused on the active participation of the viewer, has become one of the main resources for developing transmedia narratives. The transmedia narrative focuses on the elaboration of contents that expand the narrative universe of a main piece. Researchers have established that in this narrative extension two agents can participate. Firstly, the producers of the piece, in an organized way, elaborate others that expand the transmedia universe. Secondly, users, spontaneously and unplanned, contribute to this universe by participating, for example, in wikis or fan communities, or, also, generating their own productions as montages from the original material and spreading them on social platforms.

Beyond the intervention of the fans and their contributions in social networks, experimental projects such as *Mosaic* (Soderbergh and Solomon, 2017) or *Black Mirror: Bandersnatch* (Brooker and Slade, 2018) are being presented, opening a debate on how the user can be involved in the transmedia expansion of a production, in such a way that this intervention influences the narrative but without the creator losing control over the entire transmedia universe.

Mosaic is a nonlinear episodic fiction in an interactive mystery game format that is consumed through an app, although there is also the linear version for television. The user must solve a murder, and for that he can choose from which character perspective he wants to get into the story, in order to discover the murderer. It gives rise to different narrative lines that eventually go through one or several characters and some variations.

On the other hand, *Bandersnatch* is the interactive episode of the *Black Mirror* series that involves the viewer, who defines the path to follow the story, allowing him to make the decisions that the protagonist faces and, therefore, derives in one ending or another.

This text analyzes the special episode *Black Mirror: Bandersnatch* (Brooker and Slade, 2018) from the point of view of the involvement of the user in the feature film and how his intervention contributes to the transmedia universe of the piece. It is left for a later work to deepen into other contributions that make up the transmedia universe of *Bandersnatch*, for example, the official website, the videogame, the navigation guides created by fans for other users, or the interesting convergence of media through the web of *Tuckersoft*, the company for which the protagonist develops his video game (https://tuckersoft.net/ealing20541/history/), which offers one of the video games that appear in the plot, *Nohzdyve*, the title developed by Colin Ritman in fiction.

2. The transmediality in *Black Mirror: Bandersnatch* (Brooker and Slade, 2018)

The search for strategies applied to fiction and nonfiction content to capture the audience fosters the transmedia message. Transmediality affects the way of narrating, producing, or disseminating a story.

2.1 Transmedia storytelling

Jenkins determines that transmedia storytelling occurs when the "Transmedia storytelling represents a process where integral elements of a fiction get dispersed systematically across multiple delivery channels for the purpose of creating a unified and coordinated entertainment experience. Ideally, each medium makes it own unique contribution to the unfolding of the story" [10]. As a result, an extension of the main piece is expected in other formats. In addition, although each piece must keep narrative independence and complete sense by itself, they are all part of a global story. Each medium does what is best for the storytelling using its own features to have a better product; for instance, a story can be introduced through a film, expanded through television, novels, and comics, and its world can be explored and experienced through a video game [11].

Jenkins explicitly alludes in these lines to an extension in other media. However, Askwith [1], in his research, gives less prominence to the media and focuses on the new information and additive comprehension, which the pieces offer with respect to the main one. The researcher establishes a classification in terms of the expansion of the television text in which he identifies eight different categories as the possible products related to these texts. Askwith collects points of contact, touchpoints, between the main piece and its derivatives, focusing on the information or innovative content they provide: "any content, activity, or strategic offering that allows the media consumer to engage with a television 'brand' in any manner other than watching the core program content through real-time or time-shifted (DVR) viewing" [1].

This classification has been complemented by Ivars-Nicolás and Zaragoza-Fuster [12] resulting in **Table 1**: tool for analyzing the transmediality of the narrative of a derived piece, which integrates other aspects such as the formats or means in which the pieces are spread, if a centralized control of transmediality is pursued, or the different degrees of interactivity.

Returning to the premise of Jenkins that the narrative dispersion should be in different media, the extensions in the organization of **Table 1** are contemplated in the same format and medium of those of the main piece. Without leaving the television medium, in the case of a series, they can be sequels, prequels, or spin-offs of the original series. However, this type of productions is not considered transmedia strictly speaking but intramedian, following the explanations of Harvey, that is, when the narration flows between different spaces within the same media [18].

Media/ platforms	**Narrative dispersion**	**Narrative expansion: what the piece of added value brings to be considered expansive (additive comprehension), that is, part of the transmedia universe**		
Type of formats, devices, etc. The qualities of the media are integrated, enhancing the piece	Follow a strategic or tactical modality (in any case, indicate if centralized creative control is pursued) Number of pieces made by the official team or by the fans Content type: text/ photo/audio/video Order of creation of transmedia parts Autonomy of the piece's story within its universe	(1) Formal program qualities		
		(2) Expanded access		
		(3) Repackaged content		
		(4) Ancillary content	Textual extensions	Narrative extensions
				Diegetic extensions
			Relevant information	
			Extratextual information: industrial information, celebrity information	
		(5) Branded products		
		(6) Related activities	Themed activities	
			Experiential activities	(1) Player as themselves or original characters of their own design
				(2) Player as recognizable characters from the program
				(3) Player as a new token character
				(4) Player as an unspecified agent or visitor
			Productive activities	
			Challenge activities	
		(7) Social interaction	Horizontal: audience communities	
			Vertical: celebrity access	
			Diagonal: diegetic interaction	
		(8) Interactivity	Mechanical interaction	
			Content activation	
			Content interaction	Acknowledged contributions
				Influential interactions
			Social interaction	
			Degree of interactivity	Browse or activate content
				Customize content
				The content is influenced
			Actors and their relationship with the reader, in the series or in the narrative	
			Immersivity	

Sources: [1, 12–17]; own production 2019.

Table 1.
Analytical tool for the transmediality of the narrative of a derived piece.

In this state of the question, it is necessary to consider how to name and classify those cases in which, starting from the original piece, the extension of the main narrative core is generated by the audience on it, remaining in the same format and medium, without forgetting that we are facing a growing consumption of content on Internet television, independently of the access device, assuming the hybridization of the two media. It is absurd to distinguish between series and web series, for example, as a differentiator of the medium in which the series is consumed, whether on demand or not. When the medium is the Internet, it is not easy to distinguish between a transmedia and an intramedian product, so, in this text, to address transmediality, the fundamental thing is that each of the stories that make up the universe of a piece tells something different and expands its narrative world, without taking into account the medium.

2.2 The case of *Black Mirror: Bandersnatch* (Brooker and Slade, 2018)

Black Mirror is a series of British fiction whose plot focuses on how technology invades and affects our lives. Each chapter is different in terms of plot, characters, environment, etc. It is not episodic, but they share a general plot, and each chapter focuses on a different aspect of the plot, being totally independent of the rest. Nor is there a linear chronology marked by what order of consumption is indifferent. The series consists of four seasons, a special chapter of Christmas and another interactive one. The fifth season is currently being shot. In the United Kingdom, the first two were broadcast on Channel 4 until Netflix acquired the rights managing and issuing the rest. In Spain, in addition, it has been aired on Cuatro and TNT.

The interactive chapter *Bandersnatch* debuts on December 28, 2018, and can be consumed on the Netflix platform. Directed by David Slade and written by Charlie Brooker, the plot, set in 1984, tells the story of a young programmer who has to adapt a science fiction novel to a video game in which the player has to choose between multiple paths that lead to different endings. As the protagonist advances in the programming of the videogame, he questions his own reality and the authorship of decision-making, which affects his personal life.

In interactive *Bandersnatch*, the challenge is to put the audience in the same position that the protagonist faces, giving the user the power to decide between different itineraries in the development of the plot. The course of the story, divided into fragments, stops at different times, just before actions that can be decisive in the plot, offering the user the possibility to choose what he wants to happen. In each of these ramifications of the story, two options are presented from which the viewer can choose one. The navigation interface offers two buttons to the viewer in the lower horizontal third of the screen, on a black background, being presented in text, in typographic, or with some graphic or image and icon, with a low level of representation. Interaction is not mandatory since there is always a prominent option, and, if after a short time, there is no activity on the part of the user, the story continues through the default itinerary. It is unknown if it is a suggestion of viewing by the creator, which could be considered as a main piece in a transmedia universe or without intention. There are several combinations and, therefore, proposals of chapters that trigger in five possible endings depending on the decisions that have been taken during the viewing of the piece.

In an interview conducted by the magazine *Fotogramas* [19], Brooker says that "[...] it is essentially a film, but in the process of creation it shares many things with video games." The producer of the piece, Annabel Jones, describes it as "[...] an experiment, and we have created something very close to a movie, which is coherent with the character to the point where you can connect with it, but which

we have added a layer of interactivity to make the plot more alive and rich. And so within this story there is a message about control, free will, parallel dimensions ... and we have used technology to explore those concepts further" [22].

Below we explore the case of *Bandersnatch*, which was born as an interactive film and is considered the main piece of the transmedia universe object of analysis. Taking as reference the criteria of **Table 1**, the touchpoints are studied taking the chapters constructed by the users as the set of derived pieces that provide new information with respect to each other.

Bandersnatch can be consumed from the Netflix platform of online content distribution that is multi-device access through a smartphone, tablet or smart television, or a personal computer. The object interfaces, apart from the screens of these devices, can be the remote control, the mouse, or the touch screen, depending on the device and its characteristics. The chapter in question does integrate the qualities of the Internet medium through which it is disseminated, hypertextuality, multimedia, and interactivity, the latter being fundamental in the development of history enhancing the viewer's experience.

The main piece of the universe is the chapter that the user consumes for the first time. It is necessary to qualify the unique and individual character of each piece, which implies that the main piece is not usually the same for another user. The derived pieces are those generated in subsequent viewings in which different itineraries are chosen.

It follows an expansion strategy planned in advance, both spatially and temporally, which is what Scolari et al. [15] call strategic modality. That is to say, it is a chapter devised and planned by the official producer taking into account the interactivity and the possible itineraries from the beginning, as well as the passivity of the user. He has the freedom to choose but always in a controlled manner between options studied to produce audiovisual products that are organized and with autonomy of the story and its meaning in all cases. There is no specific number of pieces since the resulting chapters are particular experiences that are not published or shared with the audience. As for the order of creation, we can group all the creations of the users on the same level, considering themselves as the first pieces in the transmedia universe. The authorship of these derived pieces will be established later given the involvement of creator and spectator in the realization of it.

Concerning the touchpoints, 1, 2, 3, and 5 refer to pieces that are not considered as part of the transmedia universe because there is no narrative expansion. Touchpoint 7 is also not addressed, focused on the pieces produced by fans, users, or other companies than the official one, without any control, as this is not the case.

Considering touchpoint 4, it could be debated whether *Bandersnatch* is partially compound by expanded content through narrative textual extensions, that is, unpublished content that broadens the viewer's knowledge about narrative fiction, for instance, new stories such as sequels, prequels, or spin-offs of the original series. *Bandersnatch* does not stick to the characteristics of these three options. It is a chapter that can be understood as a film in terms of conclusion of the story, where the episode resulting from the interaction of each user does not suppose any continuation before or after that piece. The viewer designs the structure of a story that is always concluded. If it is watched, it can design a different story, although some fragments will always coincide and also the end may be the same one, because there are only five official alternatives.

Given this peculiarity, it is worth asking if these episodes suppose auxiliary or extended content, introducing new material and/or information which supplements, extends, or expands the consumer's overall knowledge, being the content similar to that of the main piece in terms of relevance. The first time the chapter is consumed, there is no new information, and this would be the original piece for

the viewer, highlighting its unique character. However, *Bandersnatch* is a movie that varies as you go, and if one chooses to go back to a previous branch or fragment, when it is allowed, the viewer then takes information that can be used to redo the narrative structure in a different way. As in subsequent viewings, the choice of itinerary will be determined based on the prior knowledge acquired. It is as if the spectator had a crystal ball to choose or not an itinerary that he has already experienced or wants to know how the story can be by choosing the other option. The narrative expansion is based, in any case, on the capacity intended by the creator of the piece to generate curiosity in the viewer, so that the audience returns to consume it, wanting to know other itineraries or endings, reconstructing the story, in a different way to the reconstruction that could make another user.

However, there seems to be a clearer point of contact as related activity, touchpoint 6, than ancillary content. Askwith describes related activities as those in which the user is asked to play an active and participatory role, assuming a role related to fictional history (videogames, role-playing games), which recreates a specific event in an episode or set of episodes. It can also be the case that new narrative plots are devised, based on what is already known or supposed, but new in terms of not having been previously presented. The assumed role can be played by a player, by a character in the plot, by a co-protagonist, or by a visiting character without an identity of their own.

As explained in the previous point, in *Bandersnatch* new narratives are devised based on the knowledge that is acquired by consuming the piece. In addition, the viewer acquires an active and participatory role and is situated within the story, as an author-reader, acquiring the role of protagonist of the plot, taking its decisions, and personalizing the story that leads to a specific experience but in a controlled manner. The episode is not recreated, but fragments of it are taken in the new version of each spectator so that the viewer elaborates his own chapter, sometimes starting from the things that he/she already knows. The degree of experientiality of the piece is implicit in the curiosity of the viewer who, either because of the novelty of the interactive format to consume a film or because of the curiosity about the story and the character, decides to repeat his experience of consumption and deepen more, enhancing the feeling of immersiveness of the user.

But in addition to highlighting an experiential activity, *Bandersnatch* focuses this experientiality on interactivity. Askwith explains in touchpoint 8 that "At the most basic level, 'interaction' can be defined as any process that involves the reciprocal (bi directional) exchange of actions and reactions that occur between two or more entities" and details how it is possible to interact with a television program identifying four categories: Mechanical interaction, between the user and the device, which is the most basic and can be done using the remote control or the mouse to select channels, the controllers of a video, etc. Content activation, between the user and the audiovisual content, when the viewer chooses possible actions of the previously programmed content, in terms of plot, experience, or challenge. Content interaction, when that interaction has a real impact between the viewer and the program, for instance, through a voting system, being the most effective approach to generate participation, divided into acknowledged contributions or influential interactions. Social interaction, when online communication is between two or more people.

In *Bandersnatch*, the viewer faces decision-making before starting to reproduce the chapter, interacting mechanically with the remote control or mouse of the device, and activating the content that he wants to see. In addition, he participates actively interacting with the content, content interaction, to determine the development of the story. The level of interaction is basic since the user is aware of their interaction through the proposed system, reducing the level of immersion of the audiovisual product. Subtle interaction [20] is a term proposed to define situations in which the

user is not aware of their direct influence on the audiovisual narrative structure, which promotes advanced levels of immersion of the viewer, and it is achieved through the creation of different types of nodes within the ramifications of the story.

Interactivity is designed, so that the viewer activates content triggering a reaction, but, at the same time, interacts with this content because choosing one option or another involves influencing the development of the story in a different way and making this decision depends on the previous events. However, interaction is not an obligatory requirement for the narrative to move forward since, after a defined time, if the user does not interact, it automatically jumps to the option marked as default.

The content interaction can be recognized or influence the story. The recognized contributions do not alter the development of the story and consist of propitiating in a planned way a contribution by the user, and this participation is recognized or rewarded (surveys, tweets that are shown on the screen, gifts or prizes from the official website, etc.). Influential interactions, however, can influence the development of the story, for example, the interactive endings of some fictional products or any creative intervention of a fan that has effects on the narration (in the writing of the scripts to come, the dialogs, in the staging, the attrezzo, etc.). *Bandersnatch* is included in both categories.

The piece does not offer the possibility of recognizing or rewarding the user's activity in a strict sense. An example of recognition could be the possibility of saving the version of the piece concluded with the user's choices that can be seen later or shared with other viewers. However, Netflix, in addition to the control systems on the consumption habits of its audience, adds the interactivity layer that allows to monitor the activity of the users, focusing on their choices to configure the story and, therefore, recording these montages of the spectators. In this way, data is obtained such as the least-seen end, which could be considered as an anonymous recognition, as well as other temporary metadata, becoming a data mining test [21]. This information is downloaded into social networks to encourage interest or challenge the audience to look for less experienced itineraries. This technique fits with the concept of "contribution" as a type of interaction that Carolyn Handler Miller explains in digital storytelling [22] in which the user can send information that is then assembled or recorded and returned to users, for example, surveys whose results are displayed in text messages on the screen. These contributions can be recognized within a television program or within one of the associated contact points of the program, such as a website. However, a recognized contribution cannot significantly alter or influence the outcome or direction of a program.

Regarding the influential interactions [1] that offer viewers the opportunity to exercise some degree of meaning, *Bandersnatch* clearly offers some level of meaningful interaction, allowing viewers to determine or alter the program itself. For this, all the possible audiovisual fragments that can shape the story must be recorded in advance. This, in other productions in which the audience votes an end, is not very beneficial because only one of the ends will see the light. In *Bandersnatch*, not only all the shots are shown, but the curiosity of the spectators to see all the possible connections generates the consequent repeated consumption of the experience.

Ivars-Nicolás and Zaragoza-Fuster [12] establish three levels of interaction with the narrative that are complementary to those explained by Askwith and applicable in this case: (1) when the possibilities of interaction that are offered to the user are limited to browsing or activating contents that show information, whether in a linear structure or not and intranodal or internodal; (2) when it is allowed to personalize content, leaving some control to the user, but without affecting the narrative; and (3) when strategically designed tools are offered to stimulate an active participation of the spectator to influence the development of the story, giving rise to a co-authorship.

Bandersnatch starts from a mosaic-type organization created by the author and planned with limited itineraries. Subsequently, the user can take part in the narrative by configuring the structure of the storytelling at different times, throughout the story, and personalizing it according to his interests. It intervenes decisively in the process, and therefore it is a co-authorship of the audiovisual experience. Without the viewer's involvement, the different versions of the scriptwriter would not see the light. Even in a bifurcation of history, you can choose the option you consider or allow it to advance automatically with the option proposed by the creator. Although the ramifications are limited, the author offers a high number of possible constructions, some more common among consumers than others, but making it difficult or minorizing the coincidence of the creation of narratives among the spectators. On the other hand, it is a chapter that can be consumed again from other points of view, generating new narrative constructions in each viewing.

The navigation system, composed of binary choice points, has three different types [20]. In the simple node through its choice, we accede to the continuation of the narrative structure, or we return to restart the discourse. In this first level, the most common is that the choice does not modify the narrative structure. The attribute node, through which we are assigned a quality to continue our navigation throughout history, allows us to access other later options that are shown only if we have received the corresponding quality. Finally, there is the anti-attribute node, which is only displayed while the user has not acquired the specific quality. This definition of nodes contrasts with the low level of interaction, since the user is conscious in choosing his decisions but does not know that depending on the nodes he is choosing, he is granted different attributes or anti-attributes that alter the diegetic path.

However, a diegetic transposition in the construction of the product itself also appears, because in cases where we decide a wrong choice, we are invited to go back and resume the story from the beginning, which produces a hypertextual palimpsest. The assembly is crucial, especially the production method used, in which the scenes have to be repeated from different angles, to maintain a global continuity to all possible plots of the proposed hypernarrative. This production can be defined as multiperspective, and at the technological level, it evolves on a timeline that offers different options in each of the pre-established nodes and that according to these decisions gives us access to a new scene or sequence of the product, from a different perspective, influenced by the sense of our navigation, built from the technological development of the platform itself, resulting in the diegetic software.

3. Conclusions

Bandersnatch extends its transmedia universe by relying on the active audience and co-protagonist, designing its own chapters, and redesigning them. These resulting pieces suppose narrative expansions in which both agents have been involved: producer and spectator. The fundamental thing is that each piece tells something different, expands the information, and expands the narrative world within the medium in which they are disseminated, being a hybrid between television and the Internet.

Personalization, another key in *Bandersnatch*, goes beyond the choice of the viewing device or the moment reaching the content, the narrative. The user designs his/her particular story, supported by a content interaction, and becomes a co-author given the immense amount of possibilities of structures that, although proposed by the creator, would not see the light without the intervention of the user. The viewer chooses his itinerary in an "intelligent" story, as to the progress, and the choices are made, and some fragments are filtered, enabling different sets of possibilities within the story.

The challenge is clear, and it comes as an encouragement, which is presented to the spectators who seek co-authorship or control over the result. In these cases, the domain of information becomes a conscious pleasure that ends up repeating the experience again and again in search of more clues, more possible itineraries, and more information. This curiosity is enhanced by the novel format that integrates video game techniques with a film.

The *Bandersnatch* experiment is an example as a strategy to attract an audience that demands personalized and participative contents with immersive capacity. The interactivity is the main element for the creation of the transmedia universe that is carefully worked to enhance the participation and immersiveness of the user in the film, generating the necessary curiosity so that it returns once and again to consume the product and therefore it results in new transmedia experiences. It offers an unusual way of consuming audiovisual fiction, as well as contributing to the transmedia universe in which the main fictional core itself is transformed into several variations.

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Section 3

Innovation in Transmedia

Chapter 3

Storytelling Mindfulness: Storytelling Program for Meditations

José Jesús Vargas Delgado

Abstract

Our chapter aims to design an empirical program for the best use of storytelling for construction, verbalization, meditations with different objectives: mindfulness and the art of storytelling. Why storytelling mindfulness? Storytelling is dynamic, imaginative, and interactive. It has a way of reaching a part of the mind and body that integrates us and helps us feel whole. It deepens our understanding of who we are and the skills we already have inside. I truly believe that at our core we are playful, imaginative beings and that this part of ourselves is what allows us to transform, grow and heal.

Keywords: storytelling mindfulness, meditations, mind, metaphors, storytelling, emotional storytelling

1. Introduction

The story is one of the oldest and deepest forms of human communication. Recently, the art of storytelling became a business technique from the Anglo-Saxon concept storytelling. Since the 90s, it has been transferred as a technique, to political, business communication, advertising and other areas of business [1]. Our contribution consists of applying it to mindfulness, and more specifically to the field of formal meditations.

The human being by nature is a great accountant and generator of stories. Since the beginning of time, he has needed and avidly wanted to listen to stories to make sense of his surroundings, of life, of his own identity, and of his emotions. In the words of Antonio Núñez, we are customs of stories. We are all creators and consumers of stories [1].

The great anthropological, religious and mythological narratives have given meaning to the life of the human being for centuries. Today, hundreds of fragmented narratives converge in formats, which continue to feed the need of the human being to create their identity and observation of their conscience.

As Núñez explains, a story is not a mere story for children or a legend. It conveys a universal truth, emotions and sensations. A story is able to give meaning to our lives and shed light on what we do not understand. [1]. And of course it is a great channel for the generation of meditations and to be able to apply it to mindfulness, and more concretely in the formal practices of meditation.

The investigations of Jiménez and Martínez [2] determine that with storytelling, it is about making communication a narrative process. In a world saturated with

information, few messages have the opportunity to reach, impact or move into action. If we bring emotion and sincerity, the emotional story multiplies its opportunities. Inserting a story in a message provides emotional, cognitive, sensory and spiritual keys. It transports sensory stimuli, generates understanding, invites reflection and debate. A story brings universal reach, since it facilitates cultural bridges through archetypes and shared myths in common schemes. In the so-called attention economy, where there is a lack of attention and an overabundance of information and stimuli, the transmission of stories can be a formula for effectiveness. What also allows a connection with our being. The stories contain a great emotional charge. A good story, is able to enter through all the senses because it can be loaded with sensations. According to Núñez, a true story pulverizes the resistance of the most cynical and angry citizen of the economy of attention [1].

As Scolari defines, transmedia storytelling is characterized by creating and developing multimodal narrative planets that manifest themselves in many media, languages and communication environments. Through the inclusion of new profiles of characters or scenarios the expansion of the story takes place. In addition, active users participate in the dissemination of these narrative planets creating new content and sharing its essence [3].

2. Mindfulness

We can translate mindfulness of the word sati, and its etymologically comes from the Pali language, and which is one of the languages in which the discourses of the Buddha were written some 2500 years ago. Sati exactly has a complex and broad translation, since in Buddhism it is a broad concept. The idea focuses on the opposite of operating on automatic pilot, recreating our mind daydreaming. The core of its meaning lies in paying attention to what happens right at each moment, in the present moment [4]. In the general field of its current application, the most used translation of mindfulness is "mindfulness," "clear observation," or "full consciousness." But there is also another translation that also has infinite routes and great applications in the field of conscious reading that is "memory." That is to say that for a phenomenon to be possible to be remembered in samples or in its fullness, or to exist in some way in our mind, it is really necessary to have lived it with full attention or full consciousness [5].

The current investigations of the doctors García Campayo and Demarzo determine that mindfulness would have at least two meanings [5]:

A state of mind: a quality that is somehow present in one way or another in all individuals in different measure, manifestation or intensity and that is probabilistically shown in the population following a normal distribution, a kind of Gaus bell. For all this, doctors García Campayo and Demarzo clearly insist on the idea that mindfulness does not mean meditation at all, given that it is a mistake that is usually made. With an optimally well-guided application and without performing the daily practice of meditation, elevated states of mindfulness can be achieved. If you practice mindfulness in the daily activities of our daily life (taking a shower, taking a car, cleaning, walking, taking the elevator, listening, eating, watching TV, resting, reading...) you can raise the levels of mindfulness. This way of being present fully in everyday life is the practice informs [5]. A way to be present in the activities of daily life from an observation and a full presence. Although it is not common because the way to reach high levels of mindfulness is combining formal practice with informal practice. In our research we will focus on the application of mindfulness and the art of storytelling focused exclusively on formal practices or meditations more than the use we know.

The psychological technique that allows to develop mindfulness: it is important to mean that mindfulness is a third generation psychotherapy [5]. Indeed some of its terms and concepts come from the Eastern religious traditions and more specifically from Buddhism, the essence of mindfulness is a clearly secular technique, of course without any religious or cultural reminiscence, and most importantly with a contrasted, evident and solid base scientific The vital event in the scientific process of mindfulness is at the foundation in 1979 of the Center for mindfulness, at the University of Massachusetts, by Kabat-Zinn, one of the most proven scientific researchers of mindfulness today. In this foundation, the stress reduction technique based on the Mindfulness-Based Stress Reduction (MBSR) method was studied and experimented [6].

When it comes to finding an optimal definition of mindfulness, we have to focus on the perspective of the state of mind and on the maximum exponent that is Kabat-Zinn, who defines it as consciousness that arises from paying attention, intentionally to experience such and as it is in the present moment, without judging it, without evaluating it and without reacting to it. In a more compressed format the same author reduces to the essence of it through the following definition: "simply stop and be present, that's all" [6]. Although in this case he disassociates himself from one of the key elements in the process of the application of mindfulness, which is the absence of judgment. Judgment inevitably takes you out of the present, and does not allow you full presence, and exposure to experience as it is. This point is important for our application in storytelling mindfulness, given that the issuance of the judgment does not allow us a full connection with the exposed present, and especially with the next moment in the form of narrative content in meditation. The appearance of the trial connects with the internal dialogue and that disconnects us with the present.

As a natural derivative of the Kabat-Zinn [6] definition, we obtain two characteristics:

- Self-regulated attention: the application of the same allows us to keep focused in the immediate experience of the present moment, generating high levels of recognition of bodily, sensory, emotional and mental phenomena. The development of self-regulated attention can be considered and conceptually defined as a mental ability, or state, that arises each moment when the individual or subject directs and focuses their attention on the experience and the present moment. Element or vital predisposition in the process of therapeutic narratives.

- Curiosity, openness and full acceptance: the main derivative of this orientation consists in the ability to recognize and perceive the raw, objective and immaculate reality of the phenomena judgment. Absolutely free of our narrative and cognitive narrative story. In the end this trained predisposition becomes a quality of personality that inevitably arises when we practice mindfulness through formal and informal techniques. It is a courageous way of looking into the eyes of what appears in our meditation.

According to García Campayo and Demarzo, the concepts of mindfulness should include the following aspects [5]:

- Ability to be attentive: a high development of our attention allows the individual not to be distracted, drowsy or indolent, but attentive and perfectly focused on what he is living. When applied to the keys of an efficient meditation through storytelling mindfulness and guided efficient and conscious practices, it consists that the individual is fully oriented and focused on this purpose. It is

not an environmental or atmospheric issue, it is a matter of attentional focus. In fact, the possibility of performing it in environments of noise, interruptions and distractions is a good way to exercise our attention muscle.

- In the present moment: the subject can focus his attention on the past (for example, to a previous meditation) missing his presence, and merge with that thought of the past. What supposes attention to the past. It is a very common sign that if it arises in certain depression pictures. Or, you can focus on future events that are about to come, which have not happened yet. It is a very common sign that if it arises in certain anxiety pictures. But we insist that attention in storytelling mindfulness should be focused on the present. In mindfulness it is important that the subject focuses exclusively on the present moment, on his current meditation, recorded or guided by a specialist. The mind loves by nature and in a consubstantial way to balance between concern (about future) and judgment of the past (past events). The mind as soon as any fracture arises in the meditation that has a link with the past or the future is going to activate, so it is important to be attentive to return again to the present without anger, again and again to the bodily sensations that irretrievably return us to the present moment.

- Intentional and deliberate: a training on the will on deliberate and intentional targeting. At the beginning, as in sports training, this exercise of attention will be important. As it is practiced over and over again, and we are aware of the intention in meditation, the process anchors, consolidates, becomes natural and can be achieved in state most of your time. It is a matter of training. If we apply it to formal practices or to meditations at the beginning, the implementation of this deliberate intention, or state in the present, generates a small effort, but little by little it becomes a much more natural attention. And the dispersions are appearing every time with less quantitative and qualitative incidence.

- Full acceptance: the subject enters a deliberate state of nonjudgment to everything he perceives. The protagonism of the judgment disappears, which is what allows us to deactivate the present, and of course any text. The subject avoids judging the present experience, accepts it in a radical and full way. That is to say that the individual surrenders without criticism to the process that is living in meditation and that is experienced. Because he has intentionally chosen his presence. It is important to delve into the process of storytelling mindfulness, the narrative difference between acceptance and resignation or passivity. If we have opted for this meditation or for this experience mindfulness, we will live it fully while we are in this moment, it is acceptance. But of course, that does not mean that we have to resign ourselves to the experience fully and resign ourselves to it. We can make the decision to deliberately divert our attention and, of course, stop experiencing that meditation or an experience of its process in the story, or stop connecting with that experience, but it is a decision of our own and in an active way [6].

- Activation-deactivation without complaint: the acceptance allows the complaint not to be presented. Any aspect of nonacceptance that exists in the experience will make us lose the state of mindfulness and take us out of the present. But before resignation there is the decision to change the attentional focus. In this way, the wear of the complaint, which is produced by a waste of energy in a position not present, does not unfold. Activation; if we decide to go deeper into a meditative story, we experience it fully. Deactivation, and if it does not finally convince us, we also leave it fully and consciously.

Within the areas of application of mindfulness and storytelling mindfulness we can identify three main contexts of intervention [7]:

- Clinical field: the practice is intended for patients, or clients, who present a medical diagnosis, or psychiatric, that heal or improve a specific or specific disease picture. An example of this field of application is found in patients with depression, anxiety, stress, chronic pain. In this type of mindfulness action, it is usually applied following protocols and regulated therapeutic processes and administered by specialized professionals with experience in each type of pathology. In the ONELIFE Clinic (center specialized in the treatment of pain in a multidisciplinary way) we have been applying this methodology in an innovative way with patients who have this diagnosis (https://onelife.es/) [8].

- Psychoeducational area: in this case, the application of mindfulness practice is aimed at the general population. They are subjects who do not have any clinical diagnosis, and who seek to improve their health in general, their psychological well-being, their levels of happiness, their capacity for attention, concentration, presence...in these cases the application of storytelling mindfulness allows to clearly reduce cognitive ruminations, mental distractions, better deal with conflictive situations, complicated or adverse, regulate intrapersonal and interpersonal emotions in a much healthier way. In these cases, a series of structured guidelines are also established and it is also necessary that they be managed and managed by specialized professionals with experience in this type of psychoeducational field. In this type of setting and contexts mindfulness is usually applied to the content of the mind, especially in the sensations, thoughts, emotions and impulses. From this framework of action we have applied, in previous research, how can be linked mindfulness processes to enhance creativity, which would be framed within this second scope of action [9].

- Spiritual scope: in this third sphere of application we find ourselves a target of healthy people, or not, who wish to elevate their spiritual development and transcendence. In this case, we must impart spiritual teachers, meditation, references, have experience in formal and informal practice, with values and ethical principles unimpeachable. In this third, and last, area of action of mindfulness, its methodological application does not only apply to the content of the mind, but to the very functioning of it [10].

Next, part of the investigations of García Campayo and Demarzo [8] we have created a series of essential characteristics that we must put into action when it comes to the efficient narration of meditations, or formal practices. The formal practice of storytelling can be recorded or performed live by a specialized professional.

3. Essential ways of storytelling mindfulness

3.1 Clarity in the language

It is important at the time of the creation and guidance of formal meditations the use of an audible language, with an optimal pronunciation, with an intensity and timbre that make it fully understandable and understandable.

3.2 Linguistic precision

The narrative verbalizations of the meditations should express what one really wants to express. As guiders of meditation it is vital not to allow the mind to generate doubt or possibility to ambiguous interpretation.

3.3 Accessible language

It is recommended in the process of storytelling mindfulness to use a language that is not too sophisticated or technical. Ideally, it can be understood by any target. Although it is highly recommended not to flirt with a crude or rudimentary language.

3.4 Characters as basic elements of storytelling mindfulness

When creating a narrative in the form of meditation we must take into account the characters as essential elements for the creation of this narrative process. The characters make us relate to them, with links of identification, opposition or projection. In meditations, or storytelling mindfulness we consider characters to be the manifestation of a conceptual, metaphorical or conscious representation of a sensation, thought or emotion. Some examples would be: a recurrent thought, an expansive emotion, a contractive emotion, a latent feeling in our body, etc. Through storytelling mindfulness we pretend that they acquire a character category so that they can be granted a route and a dramatic curve in the narrative. For all this, a character and its manifestation gives us a series of keys in relation to the environment. The characters can be defined as protagonists. For example, a contractive emotion or an expansive emotion. The presence of both is important in order to obtain the learning processes in each storytelling mindfulness.

3.5 Taxonomy of conflicts in storytelling mindfulness

There are five possible types of conflicts in formal practices.

3.5.1 Self-conflict

A conflict with itself occurs. The narration of meditation has the objective of self-healing and resolution of internal conflicts. An example of this would be guilt, self-imposed, or excessive responsibility.

3.5.2 Conflict with the environment

There is a conflict with a place, a space, a scenario, a city, a village, a neighborhood, a country, a real territory or an imaginary environment. The narration of meditation aims to heal and resolve conflicts manifested through the environment. Storytelling mindfulness has the objective of solving this conflict anchored in the past in order to obtain a healthy relationship with that territory.

3.5.3 Conflict with the past

There is a conflict with a concrete event of the unresolved past that manifests itself in the present recurrently.

3.5.4 Conflict with a specific person

Identification of a conflict with a specific person.

3.5.5 Conflict with the future

There is a conflict in the form of concern about an event in the future. Since it has not happened, it is a conflict focused on suffering, and not on the pain that is a present ailment.

3.6 Archetypes, myths, and rites as elements storytelling mindfulness

Archetypes are the primal models of storytelling mindfulness that are essential for the narration of our meditations established by Kabat-Zinn. Conceptual forms that represent an ideal form and that are shared, in the essential, by all schools of mindfulness and that, in one way or another, must be present in the narrations and in the meditations. They represent ideas or personalize ideals. They have modeling value. They carry symbolic and spiritual charge: not to judge, patience, beginner's mind, confidence, not to insist on effort, acceptance, release and kindness [6].

Myth: it is an exemplary story. Something that happened in a remote or fictitious time but that can happen again at any time. According to Núñez, a myth is an exemplary, sacred and significant history that has given meaning to the existence of man since the beginning of time [1]. In the narrations of the meditations you can connect with an exemplary story that happened at some point of our existence and that can inspire us to feel one way or another in formal practice. The elements of nature are recurring symbolic elements that allow us to connect with this type of experiences in meditation. An example of this is found in the meditation of the mountain, in which we can experience the seasons and their impact on their different zones and the orography of the same. This type of stories could connect us with the profound wisdom of this type of scenario [11].

Rites: according to the storytelling specialist, Antonio Núñez [1], if you make your story possible a rite, you convert users or recipients into walking stories. It is a way to experience our history and meditation. The return of our focus attention to the sensations of our body through a ritualized history is a wonderful methodology to connect with the present, leave the internal dialogue of our thoughts, getting the meditation to become an assumed and fully liturgical experience. An example of this is the optimal sequence of the meditations that, as a rite, we connect in the first minutes with our body in a holistic way, with the deep sensations in the senses and finally in the attention on breathing (abdomen, chest, mouth and nose). Especially significant is its application on attentional meditations, although it can also be used on generative and deconstructive ones [11].

3.7 Productive economy

The materialisations of the meditations should be focused on a direct and explicit approach, without too many descriptions or too many descriptive nuances. The mind by nature is already scattered with 60,000 thoughts in a day, such as to create ambiguous and scattered storytelling mindfulness. Messages that economize the process of history [10].

3.8 Narrative sensoriality

The processes of storytelling mindfulness must connect mainly with our senses. Each receiver has a predominant channeling of some senses over others. In order to establish connection spaces with all the senses, our mindfulness narrations must contain a direct reference to the senses with the intention of opening stimulation spaces in the different sensory channels. An example of this would be: "feeling our mind," "listening to our expansive emotion," "smelling the fragrance of our attention" [11].

3.9 Narrative gerund

It is highly recommended to stimulate the sensoriality of the receptors of storytelling mindfulness the use of verb forms in gerund because it allows a greater stimulation of the senses in a very explicit way, and invites a direct connection without digression. An example of this would be: "Accepting," "connecting," "experimenting," "checking" or "feeling" [11].

3.10 Typology of storytelling mindfulness

The most complete and complex model to apply to our storytelling mindfulness research is that of Dahl and his collaborators [5]. From this perspective types of mindfulness storytelling types are the following: attentional storytelling, constructive or generative storytelling and deconstructive storytelling. They seek to manipulate the orientation and opening of the attention and the narrative, as well as to monitor and detect it, unhooking it from the distractors to reorient it towards the chosen object. These techniques develop metacognition, which would be the cognitive function that allows to be aware of the process of consciousness. In the absence of metacognition, one is fused with experience. It is a way to fuse with the plot of a film and a narrative and an experiential fusion takes place. Next, we show the following subdivision of narrations [7].

3.10.1 Narration of focused attention

It aims to narrow the narrative focus of attention to develop unidirectional concentration in a single object, or meditative element. An example of this would be the creation of a storytelling mindfulness that focuses on a more focused field of attention such as our forehead. All storytelling mindfulness development focuses on that narrative space [11].

3.10.2 Open monitoring narration

It is a kind of storytelling mindfulness in which it consists in directing attention to the thoughts, perceptions and sensations that appear in consciousness as a result of our history. An application that has a direct impact on creativity levels [9].

3.11 Determining and nonpossessive items

Storytelling mindfulness connects with internal spaces of consciousness that should enhance observation without identification. Therefore, we recommend the use of determinant and nonpossessive articles in the creation of meditations. The use of possessive items would clearly generate an identification with the body and a very direct attachment is the body and we would immediately become attached to the thoughts more easily and fluently.

3.12 Metaphors

We use metaphors when we explain a reality with another reality. It is a transfer of meaning. It is probably the rhetorical figure par excellence, and the most used. In storytelling mindfulness is a figure that allows to connect in a subtle way through the representation of forms. The symbolic formalization of emotions through shapes, colors, textures, is a very operative morphology to express and heal emotions [9]. Jenkin's research in storytelling establishes as a key the process in which

we need to create a different metaphor to describe the commitment of the viewer with the narrative complexity [12]. In this way the creation of different metaphors of our emotions is an optimal manifestation of the feelings in the body [22].

3.13 Frequency of acceptance

It is highly recommended that the storytelling mindfulness language suggests acceptance and not fight. When we struggle with a contractive emotion, and we do not accept the presence of emotion, it becomes much stronger in our body and in our being. It is highly recommended that no effort be made about emotion, and of course the attempt to eradicate it. For example, in storytelling mindfulness to release stress it is important to accept the contractionary emotions and not fight with them. An example of this would be: "accept an emotion of grief," "cradle sadness in your body," "allow contraction," "grant love," "grace the anger in your chest," "grant the tension in your mind" [13].

3.14 Structure of storytelling mindfulness

It was the Russian Vladimir Propp (1971) who analyzed the folk tales until finding the recurrent and organic structure in all the popular narratives to be able to extend them to other scenarios. He came to define 31 constant points in his structural analysis [23]. A story advances in links. Each link marks a change, it is an event, a "beat." One of the essential aspects in the storytelling process is the figure of the hero in this type of narrative. Following Núñez and our pragmatic research, this would be the efficient structure of the story of the hero in storytelling mindfulness [1].

We have discovered an inspiring analogy between the conceptual story of the conventional hero and its application in the storytelling mindfulness environment.

3.14.1 The ordinary world

Reflecting the daily life of the character. Storytelling mindfulness shows credible manifestations to solve and heal aspects linked to everyday life. In previous research we have applied it to current conscious leaders [14].

3.14.2 The call to adventure

A signal that leads to change. Mindfulness storytelling linked to meditations connected with courage and internal evolution, to be able to change settled contractive emotions and possible processes of resignation.

3.14.3 The rejection of the call

Doubts when leaving the ordinary world. It is materialized through the internal resistances manifested through thoughts, emotions or sensations that do not allow evolution. It is important the appearance and acceptance of this rejection to be able to heal. The more you fight to make certain broader and more settled thoughts or emotions disappear, you make these emotions. The acceptance of resistances is the first step for healing through meditations.

3.14.4 The meeting with the mentor

Someone who prepares you for adventure. This manifestation after rejection is a way to connect with our healing self, an encounter with our inner teacher. It is a way

of looking into the eyes of our most enlightened and conscious self. It is a way of connecting with the observing self.

3.14.5 The crossing of the first threshold

First incident when leaving the everyday. In all the processes of storytelling mindfulness from the perspective of the inevitable processes that we must experience, there is a first barrier to overcome our meditation objectives. An important distraction arises, a first resistance to look at the emotions may arise, a brake appears in the form of attachment to our contractive feelings. The first threshold may appear in the journey through abandonment due to the difficulties to persevere in meditation, either through the appearance of expectations, or through postural discomforts.

3.14.6 The tests, the allies, the enemies

As in any conventional storytelling, in our mindfulness narrative tests appear. For example, it can physically appear in the form of small challenges. These mindfulness storytelling tests appear once the first big threshold has been overcome. An example of this are small itching or bodily discomfort that may arise when connecting with meditation. Internally they can appear through the difficulties of opening to certain healing processes. Small refusals to accept some internal processes. The enemies in the dramatization are manifested through our shadow. Underneath all exaggeration lies our enemies, the "psychological shadow": fear, lack of confidence. It happens that the natural unconsciousness weaves an emotional carpet of buried and pending issues to be solved. Aspects often derived from childhood wounds that we all go through and which, through awareness, we can accept and integrate. This type of shadow without recognizing does not allow us the fluid connection when communicating. It takes us to the communicative makeup that does not give us the option to communicate in an authentic way. The allies are our experiences of the past that on previous occasions have allowed us to heal, and that can be a column where we can support ourselves to build the cathedral of our emotions. An example of this: "Now your mind is going to bring to the present a memory of affection. An episode of your life in which you have felt total love, your deep mind can do it. And he also wants to collaborate with you" [11].

3.14.7 The approach to the deepest cavern: the great crisis

When we approach the healing and acceptance of our most contractive emotions, an encounter with the last great test is manifested. It is the last resistance of our deep self in meditations. It is time to look into our eyes to our darkest area and embrace it. An example of this is the last sequence in the meditation on self-pity: "and now remember someone with whom you have conflicts. Your mind selects that person. You visualize it in front of you. Now feel like you open your heart more to include this uncomfortable person in your sphere of love, together with other people" [15].

3.14.8 The odyssey or calvary

It is the most complicated area of the cavern. In storytelling mindfulness is focused on the moment we leave the cave. It is a way to deeply accept the great difficulty that we are healing. The frequency of gratitude allows us to overcome the ordeal in order to obtain the travel reward of meditation. An example of this in the last sequence in the

meditation on self-pity: "And now remember someone with whom you have conflicts. Accept it deeply. And even if you do not agree with some of your manifestations, you can recognize your true essence, above your relationship" [11].

3.14.9 The reward

Although it is important that we do not look with expectation or conditionings for the physical and psychic effects of meditation, we are aware that any formal practice of mindfulness contains an internal effect that is sometimes more palpable and others less, but it has an extraordinary effect. Overcoming the tests, cavern and odyssey always has healing effects on our being.

3.14.10 The way back

Return to the previous life. Each meditation is a narrative and internal healing journey, but then you have to return to reality in order to continue learning every moment. We must honor the process of returning from everyday life because that is where the understandings and our experiences of storytelling mindfulness are internalized. An example of this is found in the last sequence of inner child meditation: "…now you know that you are able to support and resolve those moments in your life, in which you feel the insecurity and other symptoms derived from confusion and lack of love. When these symptoms reappear in the path of your life, you will activate again the image of your child embraced to you. Breathing in the calm that produces the protection and love that you give" [2].

3.14.11 The resurrection or transformation

A profound change in the values of the character. Each journey of storytelling mindfulness allows us a transformation without expectations that makes us not the same as we started the trip. Each meditation process allows us to become aware of transpersonal micro transformations in each meditation, becoming aware of the fact that we change every moment.

3.14.12 The return with the vital elixir

With what has been learned, discovered. It is the process of returning to daily life with the learning acquired and internalized in the journey of the formal practice of mindfulness. The new vital application obtained in the storytelling mindfulness is already incorporated in the device of our being.

3.15 Field of infinite possibilities

Without sensory determination, or make explicit what the recipient should feel. It is important that we do not condition the receiver in what he will feel, or in what he must experience. We should not provoke expectation or frustration because we do not feel what the script a priori determines. We must allow the receiver to open a field of infinite possibilities. An example of this would be: "Everything you feel is very good," "Thanks deeply everything that appears before you" [16].

3.16 Morphology, texture, temperature and chromatic use of emotions

The formalization and manifestation of the emotions allows an experiential experimentation of the feelings in our body. The main objective of the narrative recreation

of the form of emotions is the increase of consciousness about the emotion to work, through the bodily sensations. If we materialize the emotions and focus our attention on the bodily sensations that these generate in our body, there is an irremediable decrease in the internal dialogue. There is a greater awareness of body processes such as breathing, posture, movement or listening to sounds. As the investigations of García Campayo and Demarzo say, the sounds appear geolocated [5]. What we see and experience appears with a three-dimensionality and a special brightness. An example of this is to perceive an emotion such as fear with a gray color, with the shape of a very heavy anchor, with a cold temperature and with a very rough temperature [11].

3.17 Times storytelling mindfulness

3.17.1 Micro meditations

Three to five minutes. This type of narrative is especially designed for awareness, attention and emotional update, and concentration processes.

3.17.2 Basic meditation

Five to twenty minutes. Complete meditation 20–45 minutes. The objective is the identification and formalization of emotions through compassion. For example, in those used in experiments of MBCP program to the perceptive consciousness, and the comprehensive depth of the art inspired by Cervantes [7].

3.17.3 Extensive meditation

forty five to ninety minutes. The priority objective of formal practice is the complete work of acceptance and emotional healing through compassion.

3.18 Therapeutic process

Therapeutic process of storytelling mindfulness (beginning, development, healing, landing, and epilogue of the story).

3.18.1 Introductory atmosphere

Twenty-five percentage of the contents of storytelling mindfulness. It is an essential phase in the process of introducing our narrative journey. It is a phase in which the receiver is allowed to release the aspects of the discursive mind, and enter the planet of being. An essential example of this phase we have it in a fragment of the meditation of the inner child would be the following: "Situate yourself in a comfortable position, not so much as to fall asleep. Become aware of how you are at this moment. How is your body? How is your mind? How are your emotions? Bring your attention to the breath hour by centering it in the center of the chest. How is your breathing at this time. You watch it" [11].

3.18.2 Narrative development and healing

Sixty percentage of the contents of storytelling mindfulness. It is the vital phase in the storytelling mindfulness process, aimed at healing the processes of meditation and formal practice. It is a phase in which the receiver goes into the deepest rooms of the narrative, allowing to accept with courage all the aspects that are found, holding with temper everything that appears without judgment. An essential example of

this phase we have in an excerpt from the meditation of the body scanner: "Invite the focus of your attention now to move towards the part of the feet that is in contact with the ground. Feel that area, do not think about it, just feel it" [22].

3.18.3 Epilogue and narrative landing

Fifteen percentage of the contents of storytelling mindfulness. It is the epilogue of our history and our formal practice. It is important that the surfacing to life be gradual and progressive. It is a phase in which the receiver goes internalizing and becoming aware of everything worked in meditation, and awakening through different anchors the ways of becoming aware that everything he has learned in this process will be transferred to life everyday An essential example of this phase is found in a fragment of the meditation practice of the body scanner: "And now to finish the exercise, a gong will sound, after which I would like to thank you for taking some time for this practice for an attentive and loving journey of the body. total that you are. Every time you encounter a complicated situation you will connect with your deep self and you will remember all this process of self-pity that you have worked on. Recognize in it, the act of love that is" [11].

3.19 Silence in storytelling mindfulness

Studies show that noise has a powerful physical effect on our brains, causing elevated levels of stress hormones. According to the researcher Mónica Esgueva, professional coaching, sound travels to the brain as electrical signals through the ear. Even when we are sleeping, these sound waves cause the body to react and activate the amygdala, the part of the brain associated with memory, emotion and sense of danger, leading to the release of stress hormones. Therefore, living in a noisy environment on a regular basis causes us to experience extremely high levels of these harmful hormones. In the current era of digital overexposure, in which we feel overwhelmed by huge amounts of information, disconnect becomes more relevant than ever. Research has shown that demands constant attention of modern life put a lot of stress in our prefrontal cortex, the part of the brain responsible for making decisions, solving problems and stop our harmful impulses, among other tasks. When we spend time alone in silence, our brain is able to relax and free itself. Silence relieves stress and tension in both the brain and the body, helps us replenish and nourishes our cognitive resources. Therefore it is highly recommended is mindfulness storytelling incorporation of silence as a pill break where our attention is connected with emotions that have emerged, it is a way to allow consciousness to rest in the relaxed attention. Silence is confirmed in the celebration of each moment and each frame diffused in our history. Silence is not the opposite of sound, but rather a dimension of consciousness that actually contains all sounds. We need to develop as human beings a certain relationship in silence, to become friends with him, to discover him as the fertile source of all subsequent activity and sound. In fact, we maintain an ambivalent relationship with silence, because we seek serenity and yet drama abounds in our lives, we long for fulfillment and at the same time we fear the unknown terrain that we have to cross to reach them. Silence thus understood is not a denial of life, love, or community, but it teaches us to celebrate the beauty of each moment. Silence makes us truly strong. Living in this new territory is very useful for personal life, for the healthy management of our expansive and contractive emotions, for the relationship with others and for the achievement of our projects in a truly new and creative way. From that perspective we must offer in our way of creating meditations spaces of silence, we should not direct all the time, but spaces of silence, and oxygen should be offered, so that the participant

can experience it for himself. Therefore, the language is used economically, simply, without long descriptions. Territories of silence. Storytelling in other topics is not recommended to create too many territories of silence, but meditative narratives should be offered spaces of silence so that the receiver can experience, and feel, those formats of self-inquiry and self-experimentation [14].

3.19.1 Storytelling mindfulness postural

Traditionally, the body has been denied in the West, which has given greater preponderance to the mind. The mind has been considered as the place where the intellectual life and the imaginative life and the narrative life are produced. And of course it has been thought that storytelling has its palace exclusively in mind. And for that reason always in the West it has been thought that the body is simply a vehicle directed by the mind [5]. Oriental culture has always maintained a different position, considering the body as important as the mind for the balance of the individual. Current research by García Campayo and Demarzo supports the hypothesis that guides the importance of the body in our psyche and in our way of integrating and fully listening to stories [5]. It is demonstrated that interoceptive perceptions (bodily sensations) modify our thoughts and emotions in an important way and vice versa. In fact, there are studies that show that, if the habitual posture is modified, simply introducing a pencil in the mouth and introducing the smile, one finds the experiences and storytelling more fun (for example, reading a comic story) than if it is not done this modification [5]. The body, our posture and breathing therefore conforms as an essential variable when it comes to emotion and perception of the stories. Storytelling mindfulness establishes a series of essential postures that allow the effects of the connection of formal practices to be much greater and more fluid. An example of this is found in the stretched back, open and expanding chest, hands in opening, feet comfortably resting on the floor, hand resting comfortably on the legs, face without tensions and half-closed eyes without focusing anything specific [2, 7, 10, 11, 13–21].

4. Conclusion

We discover the creative and pragmatic essence of the novel concept of mental narration. The fundamental objective is the design of an empirical program for the best use of narration for construction, verbalization, meditation with different objectives: mindfulness and the art of storytelling. The formal practices are a fundamental axis in the processes of full attention and the methodology of the story a way to face them with efficiency.

To carry out a narrative production, the best form of meditations, the form, the series of factors, the way of sharing, the power, the conscience, the keys, the time to share and the power to connect with the receiver.: Clarity in the language, communicative precision, the use of an accessible language, the awareness of the characters and their connotative impact, the conflicts in the story of an activity, the archetypes, myths, rites, productive economy, narrative sensoriality, gerundium employment. Narrative, type of mindfulness of stories, determinant articles, use of metaphors, acceptance, structure, field of possibilities in the receiver of an activity, morphology in the emotions, time of the meditations, therapeutic process in the formal practices, silence and narration.

The main cognitive, sensory and emotional advantages of the use of the mental narrative guidelines that we have developed are the following:

- Memorize. Because the brain cannot hold much information in the short term. It only collects four or five arguments. In a story, information is related within a story and facilitates meaningful learning. In this way, the use of narrative keys in meditations allows meditation to be remembered in greater depth and breadth.

- Think about images, meditate on images. The nature of our thoughts and cognitive phenomena have an image form. The experimentation of the senses in images of the meditations allows a very subtle connection much higher. Therefore, the memory and efficiency of meditation are increased through the use of narrative images.

- Fit a new idea into another already known. Variations on archetypes and myths facilitate the understanding of history, and the internalization of the story in meditation. What connects us in the infinite possibilities that the receiver is at the time of connecting with the essence of each practice and its way of healing.

- Stimulates the imagination and helps maintain attention. Our method of storytelling mindfulness allows us to open windows to an imaginary, and to a particular planet that encourages the visualization of processes in meditation. To prevent the receiver from entering into internal dialogue mode, it is important that the scenario be subtle within the meditation guide. A conscious accompaniment, but allowing a free recreation of our imagination in each sequence and fragment.

- We raise the level of acceptance and healing of emotions.

- Geolocation of sounds and a three-dimensionality vision and a special brightness. The narrative recreation of the form of emotions increases our awareness through bodily sensations, which allows the internal dialogue to descend and increase an experiential way of listening and seeing, an effect that extends from formal to informal practices.

- Improvement of the therapeutic process in meditations. The use of storytelling mindfulness through the sequentially of the phases: initiation, development, healing, landing, and epilogue of the story, allows an awareness of the place, and the point where we are at the time of surpassing screens in our healing process through narrative meditations.

Throughout our chapter, we have deepened in the extensive options of inquiry of the application of the storytelling mindfulness method. It opens a field of infinite possibilities of application that allows to put the focus of study, in future research, to many other narrative exploration scenarios such as in the methodology of creation of informal practices of mindfulness, the deepening in attentional storytelling, constructive or generative storytelling and deconstructive storytelling.

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Section 4

Educational Practices

Chapter 4

Transmedia Narratives in Education: The Potentials of Multisensory Emotional Arousal in Teaching and Learning Contexts

Bea Tomšič Amon

Abstract

The role of the teacher has radically changed with the introduction of digital media in the different stages of the educational process. The teacher is not the deposit of knowledge anymore but acts as a dramatist that creates transmedia narratives to engage students in their access to knowledge. Teaching and learning experiences are a complex formed at least by visual, auditory, and verbal stimuli combined in specific modes stimulating multilayered sensitive emotional experiences. These experiences should be conceptualized as one interconnected complex as far as students need to develop tools for interpretation, negotiation, and meaning-making of the information they are constantly exposed to. This contribution presents an interdisciplinary pedagogical project that used transmedia narratives in the field of art education, stressing on the potentials of multisensory emotional arousal that increases the likelihood of memory consolidation, the process of creating a permanent record of the encoded information.

Keywords: teaching and learning contexts, multisensorial information, content meaning-making, emotions, art education

1. Introduction

The role of the teacher within the different stages of the educational process has radically changed with the introduction of digital media. The teacher is a facilitator, tutor, and counselor, not anymore a deposit of indisputable knowledge that has to be absorbed by the students. The amount of factographic data that is, through new media, at the disposal of teachers and students is today unmeasurable. Yet facts do not represent knowledge. Knowledge arises with an interconnection of facts with a specific meaning. What to do, and how to use these facts, is the main question addressed to teachers as facilitators within the educational process. That is why the process of teaching and learning is not any more unidirectional. Instead, the teacher acts as a dramatist that creates narratives to engage students in their access to knowledge. He/she depicts contents and creates interdisciplinary connections, choosing what to present as relevant and what to leave aside because it would not work in the context of his/her narration.

Many of these narratives are transmedia narratives especially in the cases when multisensorial experiences are regarded as agents in expanding the possibilities of cognitive, affective, and psychomotor development of the students, creating an actual community of knowledge [1].

The narratives that can be created in the context of a teaching-learning process have evolved alongside the technical means today available. Narratives are no longer restricted to a textual form and could be transmitted and received as an audiovisual product and have a significantly wide palette of forms appealing to a larger portion of the senses and allowing a better immersion in the world they present while requiring less effort on behalf of the audience. However, narrations are a communicative process, and as such it depends on the audience and its reaction. We could argue that a functioning narrative reflects not only the storytellers' perceptions but also the perceptions of the audience [2].

Teaching and learning experiences are a complex formed at least by visual, auditory, and verbal stimuli combined in specific modes, stimulating multilayered sensitive emotional experiences. These experiences should be conceptualized as one interconnected complex as far as students, as stated before, need to develop tools for interpretation, negotiation, and meaning-making of the information they are constantly exposed to. Taking into account that in a rapidly changing world it is not possible to conjecture what kind of knowledge will students need in their future lives, these experiences are highly relevant in any educational process. They need to be given tools for future interpretation of facts. Bare facts are meaningless for them.

In the field of art education, which is our research area, it is worth noting in today's school the fact that the majority of the pupils is in daily contact with digital media with its colorful, fast-moving sequences of images and, of course, computer programs that provide a wide range of possible uses and experimental experiences. Scanning and combining images, exploring the possibility of multiple printings, and the divergence between printed and screen images are only a few possible areas to consider. Numerous images are produced with widely available, highly interactive, and user-friendly software. These experiences do not only imply increasing speed of changing images, mechanical simplicity, and wide possibilities in the resolution of different technical processes but, perhaps most of all, a specific experience of space perception and representation, which every student carries with himself or herself to the classroom and is essential to education in general and to art education in particular, not to mention the fact that artworks can be easily shown in digital social media as Facebook, Instagram, YouTube, and others, creating new forms of artistic dialogs that were unimaginable two decades ago.

Digital media is also making new and unique aesthetic experiences possible and changing the way in which art is conceived, created, and perceived. A new world has opened for artists as well as educators. Technological development requires the teaching profession to make changes at an unprecedented rate and opens a wide number of questions. Those connected with the impact of transmedia narratives via multimedia technologies on students are relevant to teaching as well as to artistic practice.

2. The pedagogical process of art education

The goals of art education at all stages of education programs in general include the development of observation, space representation, creativity, imagination, the knowledge of contents from artistic theory and history, artistic techniques, and processes and materials, always rendering a direct relationship between practice and theory.

Learning takes place in two phases: perception, which includes acquiring the information, and processing, which includes storing and making sense of the information. There are different ways or modalities in which information is perceived and processed. The ways in which information is perceived by the learners are concretely, such as feeling, touching, seeing, or hearing, and abstractly, such as mental, visual, or conceptual models. Processing the information perceived is the next step: learners process the information by active experimentation, doing, manipulating, or using the information and reflecting upon or thinking about the information.

Within art education, the teacher should enable gradual learning, on the basis of perception, experiencing and understanding, and processing of this information using visual signs in creative art expression. That is why it is very important for all students to enrich the development of their manual skills and orientation, to experience with gradual understanding of visual art concepts and rules of visual signs' use within the visual art education process.

Solving design problems at any educational stage implicates a special connection between three inseparable aspects of the artwork: the theoretic problem, the motif, and materials and art techniques, each focusing on the cognitive, affective, and psychomotor aspects of the task or problem to solve. Problems also enhance critical evaluation, and students are independent at finding original solutions to the demanded tasks.

2.1 On creativity

Art education is one of the core subjects that enhance the development of creativity by each individual student. Its activation is the key for transfer to other school subjects and fields.

Within art education it is common to evaluate the results; many times the process remains unassessed. Many definitions of creativity also focus on it from the point of view of the results. These definitions are still current in many aspects of activities linked to art, like critics, market, and the construction of art history, but in the context of art education, it is more accurate to consider the teaching-learning process that deals with creativity. In art education, creativity has more to do with the ability to find proper strategies in order to solve problems than with the characteristics of a final product.

Many authors point out different aspects linked to the requirements of creativity: Bruner [3] believes that individuals differ by the way they collect information. If someone collects a wide palette of information, he/she is not directed to convergent production only. Dörner [4] thinks that the influence of the environment is a key for creativeness. The motivation of an open, free, and exciting context is the key for creativity. De Bono [5] links creativeness with lateral thinking, similar to Guilford's [6] definition of divergent thinking, considering the possibility to enrich primary perceptions. He thinks an individual is creative if he/she can successfully present his/her specific and unique perception of the word which is dependent on the amount of information he/she gets and the way he/she is able to process it. Trstenjak [7] links creativity to different structures of thinking: creative thinking is the result of cooperation between heuristic and epistemic structures of thinking. Torrance [8] sees creativity as a conglomerate of abilities, skills, and motivation.

Karlavaris [9] defines six factors of artistic creativity which function as a concentrate of artistic competencies: originality, which means unusual strategies when solving problems, sensibility in discovering problems and understanding aesthetic structures, imagination in the redefinition of the role and value of elements, aesthetic elaboration and planning of ideas and solutions, fluency of ideas, and flexibility in the arrangement of the means of expression. What

is particularly outstanding in this definition is that creativity in art education focuses on processes as well as on final products. In this way it is possible to take into account the different attitudes, interests, and affinities of the various actors in the pedagogical process.

It is not easy to define the criteria to describe creative practices. The resulting artwork is the basis for a precise description of the process that originated it. It is also the product of a connection between the engagement of the teacher and the engagement of the student. Nevertheless, many times this relation is not proportional. A teacher can invest huge efforts in motivating a student, and because of many reasons, the student cannot reflect them in his/her work. The opposite is many times present. Internal motivation can play an important role in students' performance regardless of the teacher's attitude.

"Creativity, if believed to mean originality, imaginativeness, ingeniousness, innovation, inventiveness etc. is also linked to a certain positive understanding of the creative power. This is applicable to students and teachers as well: positive experiences motivate new creative engagements" [10].

2.2 Types of students

Departing from the definition of transmedia or cross media narratives as experiences distributed by a variety of different media channels, creating pieces with different contents out of one story, it is relevant to define different types of students if we wish to engage them within this particular educational process.

Differing from multimedia, in which a single content is presented by a variety of media forms as audio, text, or visual material, transmedia concentrates on the possibility that a content gets an unpredictable number of meanings and uses during its process of transmission through different media channels. In a world where individual students use these media in different ways, depending from their individual needs and abilities to manage them, and have different forms of access and experiences with them, the multisensory experiences provided by multimedia are not enough to assure a creative use of the contents a teacher wishes to make his/her students familiar with. Individualization is something that should not be overlooked or missed. Relying only on multimedia means a limitation in managing didactic means as resources in the process of teaching and learning.

The learning styles of students depend on several factors, including their environment and other cognitive and emotional factors. Students retain and process information differently. Allowing them to access and process information in terms they are comfortable with increases their academic confidence, motivation for leaning, and interest.

In general, we can identify four primary types of learners: visual, auditory, writing, and kinesthetic.

Visual learners prefer to take in information using images like charts, maps, graphs, diagrams, or any pictorial material. However, this type of learning style does not include photographs or moving images. Instead, visual learners learn best when information is presented using patterns, shapes, and other visual aids in the place of written or spoken words. Auditory students learn best when information is heard or spoken. They benefit from lectures, group discussion, and other strategies that involve talking things through. Students who have a writing preference prefer information to be presented using words, emphasizing text-based input and output, taking notes to better retain the information. Kinesthetic learners learn best when they can use tactile experiences and carry out a physical activity to practice applying new information, recreating experiments to illustrate concepts [11].

Knowing how to address the learning needs of individual students is an important part of creating meaningful classroom experiences and helping them retain what they learn.

The key activities of the learning process are perception and process in terms of action—perception and processing. Each can be divided into two sides: the use of experience of the senses and the abstract detection of information using mental or visual conceptualization. Once students get the information, they need to process it. Some do this by actively experimenting on the basis of information, others by reflecting about it.

Following Kolb's [12] model of experiential learning, we can detect students' preferences regarding ways of reaction and behavior in the case of different given tasks. The author distinguished four types of students: activists, thinkers, pragmatists, and theorists.

Activists or adaptable accommodators are students who actively experiment and swear on the specific experience in every artistic work, relying on intuition more than on logic, and although they can react to unexpected circumstances, it may happen that they are too late to complete the given task or they are overly satisfied with a result, which could be significantly better. In this case, the teacher must show the student different opportunities that he/she did not preview, directing him/her to a proper evaluation of the result.

Thinkers or divergents are students who always come from a concrete experience on the basis of which they reflect on the presented facts and look at things from different angles, ending to gather information and use imagination to solve problems. They are very wide, but they prefer to exactly observe a phenomenon more than to operate on it. The teacher should help to synthesize various information and direct it to a unified project in which all elements of rich observation should be present. It is necessary to show that the artistic task is realized only in the artistic product and that each solution is interesting in its own way. It is necessary that students learn to carry out the ideas to the end.

Pragmatists or convergers are students who actively experiment and form an empirical understanding of the problem and an abstract conceptualization of it, look for useful aspects of learning, and react quickly and deal with things as they would always be a technical problem to be solved. In this case, it is necessary that the teacher points out to all the diversity of the components of the artistic activity, directing the students to an emotional attitude toward the solution of the artistic task. In this way students have the opportunity to discover other aspects of work and their own personality.

Theorists or assimilators are students who first think and then abstractly conceptualize synthetic and logical types, abstract ideas, and concepts. Logical interpretations are for them the most important aspects of solving a task. Practicality is less important than a good logical explanation. They can create theoretical models and render them inductively. In this case, it is also necessary to emphasize the practical aspect of solving the artistic task [13].

Seagal and Horne [14] have developed a three-dimensional model, stressing on the mental, emotional, and physical dimensions of learning. The mental dimension is related to thoughts, values, objectivity, concentration, and abstract conceptualization. The emotional dimension means connecting, organizing emotionally, and communicating. The physical dimension is related to manifestation, production, and activity-oriented skills. The three dimensions actually work together, but usually one is more pronounced than the others. For example, if students work better in the mental dimension, they will think about the content of the problem; if they are emotionally relational oriented, they will skillfully organize parts of the problem, but if they are physically oriented, they will actually try to solve the problem [15].

Models represent only a basic orientation in the detection of personal learning characteristics. If we compare the three-dimensional model with Kolb's four-type model, it is noticeable that the same characteristics are repeated: the experience of the problem, the reflection on it, the analysis, and the activity or application. Although every strict classification of students from the point of view of work in a concrete class is almost impossible and pointless, these are definitely welcome descriptions of the different approaches and modes of work. In the case of artistic design, the possibility of identifying the individual way of work and the inclination of each student is extremely valuable since each student is practically involved in fine arts in different ways. The teacher must be prepared in such a way that he/she can advise and objectively evaluate the work of each student. Identification of characteristics and deficiencies means that the teacher, together with the student, can find the most meaningful way in carrying out the entire activity.

Taking into account learning modalities is a sensible starting point because it emphasizes the construction of the learning process on the basis of individual experiences and findings of each student. These models offer the theoretical framework within which it is easier to operate, especially if we take into account all the factors that directly and indirectly influence the learning process as are the material conditions, the number of students, the characteristics of the organization of lessons, and, last but not least, the personality of the teacher.

2.3 Attention, emotion, and creativity

Transmedia narratives in the field of education are many times interdisciplinary pedagogical projects that stress on the potentials of multisensory emotional arousal which increases the likelihood of memory consolidation, the process of creating a permanent record of the encoded information. Being attention and emotion parts of the cognitive process that is implied in learning, it is important to mention them as core elements in the design of a pedagogical process.

Emotional arousal is a mental state associated with thoughts, feelings, behavioral responses, and positive or negative experiences. In the pedagogical field, it is linked to the motivation of learners and their particular learning styles. Cognition, especially from the point of view of the interpretation of events or data, is an important aspect of emotion which is essential in the process of learning [16].

Any environment is a complex which offers many aspects and point of reference which we can or do not notice depending on our previous experiences, interests, and sensitivity. We focus our attention on certain phenomena and disregard for other. It is practically impossible to become aware of all the elements and details our surrounding space contains. Attention is thus a cognitive process in which we select what to concentrate on.

Because it is strongly linked to our previous experiences, it is sometimes unrelated to the external elements of the environment, but it could be stated that it is more a phenomenon referred to as mind-wandering or spontaneous thought [17].

Depending on the investigation point of view, definitions of attention recurrently concentrate on different aspects of it. It is possible to differentiate focused, sustained, selective alternating, and divided attention. Focused attention is the ability to react to specific visual, auditory, tactile, or other stimuli. Sustained attention is connected to the ability to maintain a consistent behavioral response during continuous and repetitive activity. Selective attention refers to the capacity to maintain a behavioral set in the presence of distracting or competing stimuli. Alternating attention refers to the competence for flexibility in shifting focuses of attention when tasks require different cognitive responses. Divided attention refers to the ability to respond simultaneously to multiple task demands. These different modes

can be applied in the research of perceptual issues. Overt attention means directing sense organs toward a stimulus source. Covert attention is the act of focusing on one particular part of several possible sensory stimuli.

Basically these processes involve maintaining behavioral goals as a basis for choosing what aspects of the environment to attend to and how to carry out actions in this context to achieve any aims. Emotionally salient stimuli automatically capture attention [18].

Emotionally arousing stimuli compared to neutral stimuli result in heightened memory for particular details, key to get the meaning of the emotional stimuli and diminished memory for peripheral details. Excitement may also increase the duration of attentional focusing on the thrilling stimuli, delaying the disengagement of attention from it.

Emotional items are easily processed when attention is limited, suggesting a prioritized processing of information. When attention is limited, arousing items are more likely to be processed than neutral items [19].

In addition to its effects during the encoding phase, emotional arousal increases memory consolidation during the retention and storage stage of memory. In this way, the process of creating a stable record of the encoded information is enhanced. Establishing links between new and stored information is a process of elaboration. Association of data stimulates memory. Of course, this process can disrupt memories for peripheral details. The almost automatic attentional modulation of memory for arousing information, memory for non-arousing positive or negative stimuli may benefit from conscious encoding strategies as elaboration is [20].

These processes are extremely complex in everyday life environments without boundaries, where we are exposed to an extensive amount of information we cannot easily and unambiguously perceive, decode, and encode. Stimuli are combined in specific multilayered unpredictable sensitive modes.

Perception in these cases is affected by a conjunction of factors which include the characteristics of the visual and auditory search, attention and emotions, memory, previous experiences, and the individual capacity to rationalize emotional processes that allow decoding signs in the environment.

In fact, we are overloaded by the huge amounts of data that our environment contains. The impossibility to control this situation means that we may many times perceive things we otherwise would not. Actually, many of our perceptions are forced by intentionally created stimuli that could impose certain actions and beliefs [21]. Any highlighted event can limit our attention. Any perception can control our emotions. These facts are of crucial importance within the educational process.

Transmedia narratives traditionally refer to telling a story across multiple platforms, allowing audience participation, such that each successive platform heightens the audience's enjoyment. Pratten completed this definition stating that this means taking the audience on "an emotional journey that goes from moment-to-moment" [22]. This definition is particularly relevant if we consider how important is, in the endless possibilities of getting information teachers and students have at their disposal. To decode, select, and make a suitable meaning from them is a process that primarily engages emotions and attention. Emotions lead to attention; thus they are an important internal motivation tool in the teaching-learning process. Without motivation teaching and learning are practically impossible.

2.4 Didactic means based on multimedia

A teaching-learning process is practically impossible to conceive without using proper didactic materials. They can be defined as materials that the teacher uses during the teaching process as teaching means, for the students who acquire knowledge; they are learning materials.

Today multimedia materials are widely used, replacing the traditional forms of printed produced material for students.

Many researches have been held about the use of multimedia technologies and their increasing role in education. The term multimedia specifically refers to the combination of multiple technical resources for the purpose of presenting information represented in multiple formats via multiple sensory modalities. Accordingly, multimedia resources can be considered in three different levels: the technical level (the technical devices such as computers, networks, displays, etc. that are the carriers of signs), the semiotic level (the representational format such as texts, pictures, and sounds of those signs), and the sensory level (the sensory modality of sign reception such as visual or auditory modality). Many researches indicate that multiple external representations and multiple modalities are not always beneficial for learning [23]. Another theory [24] states that students learn more deeply from words and pictures than from words alone, that they learn more deeply when extraneous material is excluded rather than included, and that they learn more deeply when printed words are placed near rather than far from corresponding pictures. Other authors [25] state that adding pictures to a text may not always be beneficial for learning but may have negative effects if poorly matched to the learning task.

In spite of the fact that moving images suppose realistic elements connected with the perception of space, many authors [23–25] think that in many cases they do not foster improvement in learning because they cannot replace the value of other spatial-visual representations like schemas in the case of learning contents about the nature of features that show systemic organizations.

In fact, it is possible to ground the inquiries on the ways learning will presumably change within investigations such as those held by Lewalter [26], who questions the assumption that animations result in better learning than static pictures and examines whether the two kinds of visual displays lead to different cognitive processing. She argues that the difference between their respective cognitive processing demands is twofold. On the one hand, directly supporting the construction of a dynamic mental model through an animation may reduce the load of cognitive processing. On the other hand, the transitory nature of dynamic and audible visuals may cause higher cognitive load because learners have less control of their speed of processing.

In the field of art education, we should generate and use didactic means that base on animations with dynamic, moving images and sound. Reception of dynamic images requires a special predisposition because they function as reduction of authentic spatial experiences.

Multimedia images involve the immersion in a virtual reality. Virtual reality supposes a sensor-motor exploration of an image or space that gives the impression of a living environment. It becomes a multisensory interactive space of experience in real time. The majority of virtual realities that are experienced mostly visually isolate the observer from external visual impressions, please him or her with images that imitate the plastic characteristics, scale and color of real objects, expand the perspective of real space into illusion space, and use light effects to impress the observer making the images appear as real. Another important element within virtual realities is sound. Sound informs us about sources and events, and in spite of the fact that our primary perceptions suggest that all material objects are visual, what we see is many times directly related to what we hear or should hear.

"The expression virtual reality is a paradox, a contradiction in terms, and it describes a space formed by illusionary addresses to the senses. Virtual reality is in essence immersive. Probably the most important aspect we should take into account is the fact that they so frequently demand different modalities of perception" [27].

It is highly important to design suitable didactic tools taking into account the goals we wish to achieve during art education lessons. We should take into account that dynamic images may foster a singular spatial experience but they may also impact negatively on students that have difficulties to express themselves in three-dimensional representations of space. In such cases they can result in oppression and insecurity, creating a class climate that does not support their learning processes.

Educating students about arts and culture focusing on vision as the main source of perception or as the only element that could foster improvements in the development of spatial representation, putting aside a holistic conception of perception or relating only on traditional artistic disciplines, would not offer them the necessary competencies and operative experiences they need to develop in the world nowadays. We should consider the individuality of each student and his/her necessities, affinities, interests, cultural background, gender, etc. Multimedia experiences are also important for other school subjects as most of them use visual and auditory representations of different kinds. The development of the ability to imagine spatial relationships is especially important in the fields of geometry, geography, biology, physics, or chemistry.

Individualization within the pedagogical process is today a key commitment for the teacher. Taking into account the different ways in which students learn best, visual, auditory, reading/writing, kinesthetic, and the learning styles regarding the ways in which students deal with their experiences, is of primordial importance when designing multimedia didactic material for the class and planning transmedia educational strategies.

3. Interdisciplinary approaches: aspects of cross-curricular integration

An interdisciplinary approach means the acquisition of certain skills that are common to different subjects or disciplines. The transfer values of these skills allow them to be transferred to other areas of knowledge. An integrated form of interdisciplinary approach compares contents and concepts that are common for various areas. It is a meta-curricular approach to the development of mental abilities, social skills, multiple intelligences, technology, and learning abilities through different disciplines.

The processual aspect of interdisciplinary strategies emphasizes the integration of processes and learning objectives. It is realized on the basis of conceptual, learning-targeted, and process-development planning. The conceptual design concept is the concept or principle of knowledge. Knowledge of different subject areas is linked to concepts in order to establish a transfer of thought strategies. On this basis, creative solving of problems in various subjects and the promotion of higher levels of mental skills can be carried out [28]. This model stems from the assumption that the critical thinking capabilities need to be developed to structure, classify, and develop or achieve desired results based on conceptual structures. Content and learning processes are intricately intertwined, although the teacher many times derives from a known connection of contents between different subjects. The result shows the equivalence of content and process goals. Drake [29] also agrees with this approach, as he says that the brain is organized to receive more information simultaneously and that holistic information can be easily and quickly recalled in memory.

The ideological assumptions that form the basis of our school system point to the advantage of subjects that express logical-analytical-mathematical thinking and the ability of verbal expression, while artistic-aesthetic experience and expression

are pushed into the background. The system clearly gives priority to the development and use of the left brain hemisphere. The recognition that both hemispheres do not function separately but effectively complement their functions leads to the conclusion that priority should be given to such processes that integrate the ability of both brain cells. Gardner's [30] multiple intelligence theory, which distinguishes linguistic, musical, logical-mathematical, spatial, motor, interpersonal, and intrapersonal intelligence, supports cross-curricular integration. Children should be able to develop all seven intelligences, as this is the only way to discover and exploit their potentials. Undoubtedly, cross-curricular integration supports these processes because experience shows that students are developing interest and motivation for learning in the course of cross-curricular integration and deepening understanding and use of knowledge.

With art education the teacher also develops a very important component of personality, artistic creativity, and through it also creativity in general, which today is an irreplaceable development factor of the individual and the society. The promotion of artistic creativity includes the promotion of originality in the artistic product, the use of material, procedures and methods of work, the sensitivity of perceiving artistic qualities, the complexity in the transformation of art products and materials, the complexity of ideological aesthetic design, and the solution of artistic problems and flexibility. Interdisciplinary links between logic and artistic subjects have proven to be a good starting point to develop the logic thinking needed to solve rational problems like how to use artistic material from a technical and technological point of view as well as the creative thinking needed to find paths to solve analytical problems within natural sciences.

To express this need for a wider approach to knowledge in the words of Eisner [31], "The arts make vivid the fact that neither words in their literal form nor numbers exhaust what we can know."

4. Multimedia experiences as components of transmedia narratives

Teaching and learning experiences should be conceptualized as one interconnected complex stimulating multilayered sensitive emotional reactions as far as students need to develop tools for interpretation, negotiation, and meaning-making of the information they are exposed to. They need to be given tools for future interpretation of facts. Bare disconnected facts are meaningless if they are presented in a context that does give way to a holistic representation of the world.

Any material can be easily shown in digital social media as Facebook, Instagram, YouTube, and others, creating new forms of dialogs among their users. This implies that it is not possible to conjecture the destiny of any material posted in such media and the reactions it can produce. Many specific stories can be created out of the departing point that any posted material is. These narratives are transmedia narratives that eventually use multiple forms of media that deliver a unique content through different channels. These experiences, even if we would justly conjecture that they are impossible to control in the sense that we cannot easily assess and evaluate the results, are highly relevant in the educational process.

Multimedia production gives voice to students who are otherwise silenced in their schools and communities. It allows students to represent their experiences as cultural insiders, instead of the incessant misrepresentation of them by media producers outside their communities. A story, then, is performative, born both through a process of self-reflection and meant specifically to communicate to another. A story is a representation of an experience, one which is crafted in particular ways and media to represent particular insights and emotional significance. The

emotional work of multimedia storytelling for the students is linked to the developing sense of being social subjects who can inquire into and act upon the world. This idea suggests the social significance of such approaches to learning [32].

On the other side, the teacher is not the deposit of knowledge anymore but acts as a dramatist that creates narratives to engage students in their access to knowledge. In fact, the teacher can select themes that are in his/her opinion relevant, avoid others not considered as important, and connect them in different ways, creating different stories out of a content that is prescribed within the curriculum. The autonomy that makes this possible is narrowly linked to the pedagogical orientations that promote problem solving-based strategies, goal-based planning of the educational process, and, in the last decade, competency-based education. These strategies basically differ from content-based education and allow constructions of knowledge that are intended for a target group of students with specifically defined needs and interests.

This new culture shifts the center of the educational process from a frontward relation between teachers and students to an individual response and engagement from these last to a community that is continually creating and recreating knowledge.

In a transmedia globally connected world in which it is possible to use different platforms to connect and communicate, learners and teachers are not attached to a specific space anymore. It is in fact a global, multicultural community that eventually uses many verbal languages and scripts. In these contexts, visual language becomes universal that is widely understood and at the same time carries the particular touch of cultural peculiarities [33].

We could infer that in these cases, individual creativity is not a final goal anymore because of the shift from exclusively individual expression to a collective upgrade of the results achieved during the interchange process that is fostered by transmedia. It is a kind of collective creativity that shares students' various experiences, viewpoints, interpretations of meanings, skills, and abilities that usually engage, motivate, and catch individual students' attention because each one of them recognizes his/her responsibility in the construction of the entire process [34].

As a pedagogical tool, transmedia narratives allow critical thinking, as it is necessary to identify relevant or interesting information and materials to be able to engage in the process of construction of knowledge. At this stage the teachers may act only as a facilitator because the students are the actual actors in this student-centered learning process.

Another characteristic of this strategy is that it does not go for a linear process as in traditional pedagogical approaches. Individuals should create parallel stories that eventually deal with contents in a complementary way. The point at which they meet to create a narrative that fulfills the learning goals as a whole is not easy to predict. And the reactions it can produce and the actual characteristics of the final products are unpredictable. Being centered in students' response, transmedia storytelling in pedagogical uses is a wide and deep process. Of course, we cannot foresee how deeply it will come in the end. Maybe, this is the most obvious feature of its use in the world of education. If it was not used in this way, all the potentials of these strategies would be abridged.

5. Transmedia narratives in an art education: project-based methodology

Everyday life in a school environment offers many interesting challenges. A generational gap between many teachers and students is becoming deeper; many older teachers still have little experience with social digital media and are negative

toward its use as didactic media. Simply being able to handle the technical area is not enough; teachers should be primarily experts in the semiotic and sensory levels. Not all of them have experience in this field. On the other hand, computing is included in school programs at an early stage. Students make wide use of computers because schools are highly provisioned with technology. They also make wide use of digital social media because interacting and communicating through them are part of their lifestyle. Media reshapes their visions of the world.

Students are a group of individuals with different experiences, abilities, interests, and affinities. Each one can construct the meaning of the acquired knowledge in his/her own way and in accordance with his/her own experience. Such an approach, which supports the links of various contents in order to establish the transfer of thought strategies, necessarily takes into account individual interests and abilities of an individual. The need for an increasing individualism of the learning process requires that the teacher always keeps in mind the individual and the group, which dictates the creation of flexible, alternative, and very dynamic teaching strategies. The implementation of cross-curricular links therefore largely depends on the initiative, the professional engagement, and the autonomy of the teacher.

On the other side, individual students make use of social media to share their experiences, ideas, and interests, creating communities where people with similar interests meet to expand the horizon of individual achievements. This is a consideration of chief importance when planning to use these platforms in the pedagogical process, and teachers who are aware of this can make interesting improvements in the way they approach planning the pedagogic process.

The acquisition of knowledge through an experience that does not present any boundaries or limitations regarding learning contents is essential. Nowadays students have very different backgrounds, and many teachers today are confronted with the fact that students possess many information mostly gathered and facilitated in digital media and the Internet. Many times these information exceed the contents required within curricula. Curricular changes develop at a significantly slower rate than students' acquisition of knowledge and experiences. Probably this is the main gap in our school programs and one of the key difficulties teachers face planning their teaching processes.

At this place, it is necessary to add that taking into account that our project was launched within art education, some considerations about the aesthetic competences students should achieve in this field must be made.

There is a big difference between capturing daily life in a random way and actually using visuals to communicate telling mostly visual stories. The capture of visually interesting content is at the foundation of visual storytelling. Today everyone is taking pictures, shooting video, and sharing it. The proliferation of devices is a major challenge faced by the student within art education. But while technology has spread the camera far and wide, giving it vast new powers, it is not the key to taking viewers to that next level of seeing. The ability to see and evaluate images with a well-educated eye is vital [35]. And this is of key importance in the art education teaching and learning process; it is one of its main goals.

5.1 Project-based methodology and transmedia narratives

In order to verify how transmedia narratives work in the context of a cross-curricular or interdisciplinary teaching-learning process, we developed a pedagogical approach using project-based methodology. It employed transmedia narratives in the field of art education, stressing on the potentials of multisensory emotional arousal that increases the likelihood of memory consolidation, the process of creating a permanent record of the encoded information, and allows for different

interpretations, negotiation, and meaning-making of them. This enabled us to understand the impacts these activities may have on students and to recognize the possible positive and negative characteristics of this approach to be able to consider them in future projects.

Our research was carried out during the 2018/2019 school year. It included 15- and 16-year-old high school students, three teachers from the fields of art history and theory, biology, and mathematics, and the researcher that proposed the realization of the project. Art education was the core subject, but goals and contents prescribed by the other subjects included in the activities had to be achieved. This is an important requirement in interdisciplinary projects.

At the beginning all teachers were presented with the characteristics of the project, focusing on the meaning of transmedia activities and their potential benefits because they had no experience in such field. A detailed plan of activities was issued together within which each teacher explained his/her expectations and the exact results he/she should find achieved at the end of the project.

We decided to launch the project including three basic phases that considered key activities. The first phase included the formation of working groups among students, presentation of the basic contents by the teachers, and the realization of a motivational and introductory artwork; it also included individual gathering of information, elaboration, and presentation using multimedia to the rest of the participants in each group (**Figure 1**). The second phase was meant for the students' interchange in social media, creating a story out of all the collected information within the groups. The third included interchange and connection of different viewpoint stories, which should lead to a new original and wider story, which could

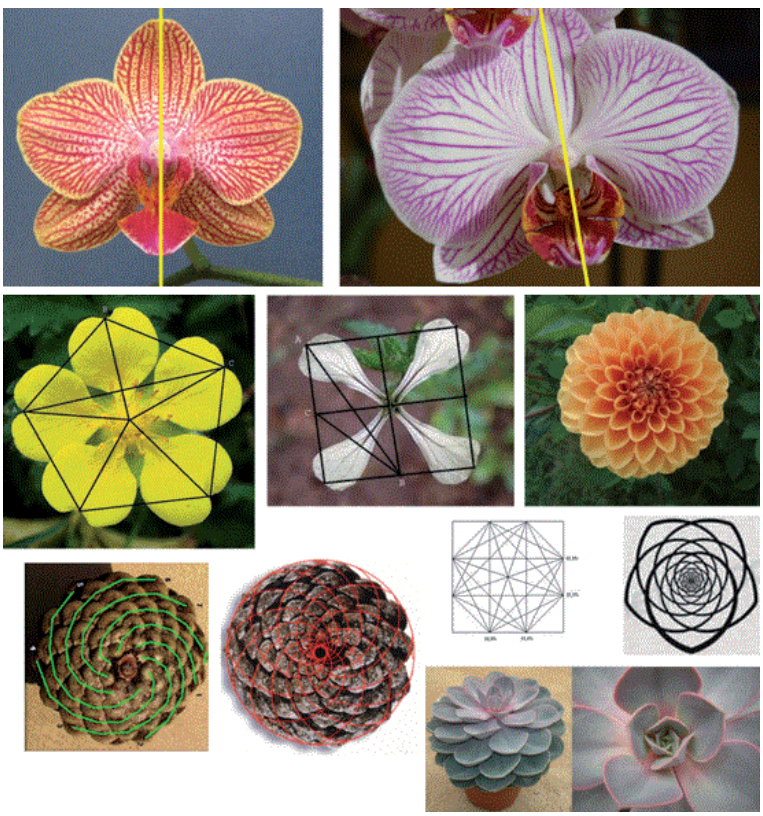

Figure 1.
Material collected in the biology and mathematics groups.

be accessed by all the participating students. At the end of this phase, students from each group had to propose an activity within art education intended for the students that participated in the rest of the groups. This was the point of conclusion of students' activities and was meant to practically use and consolidate the supposedly acquired knowledge. The last part of the project included a meeting of all the participants, where students presented the development of their work during the different phases. This was the main material that was evaluated by the teachers. In this way we could have a picture of the process within the three groups of students, compare the results, and draw conclusions.

Upon completion of the course using transmedia storytelling with cross-curricular integration between different contents from fine arts, biology, and mathematics, the students answered short survey questions. With the questionnaire we wanted to find out their opinion on the approach used.

One of the main goals of the project was to verify to which extent students would go deep in their acquisition of knowledge through an experience that did not present any boundaries or limitations regarding learning contents. Another goal was to detect how students would take advantage of the proposal to use different distribution channels during their learning process.

As stated before, students worked in three groups of five or six participants each, regarding the fields of study. The groups were formed by participants with different learning styles and ways of reaction and behavior when having to solve problems. Diverger and theorist students were fluent in collecting and sorting material; pragmatists in linking contents, forming an empirical understanding of the problem, and looking for the useful aspects of learning and solving the task; and activists concrete at the moment of concluding it and giving it a final form. This assured a wide range of approaches to the given task and enhanced the actual experience of teamwork where each individual contributes to the result from his/her own viewpoint and specific manner.

Each group could choose a concrete field of research, art history and theory, biology, or mathematics, to ensure the interdisciplinarity of their approach, the relations between art and nature being the general theme of the lessons. Students could pick out the aspect of the problem they wished to develop through their works.

Students that engaged in the field of art history and theory were presented the work of artists that dealt with nature in different ways in the motifs of their artworks as Caravaggio's still lifes; Arcimboldo's portraits made entirely of objects such as fruits, vegetables, flowers, or fish; Cezanne's still lifes and landscapes; Ernst's frontages to reveal the imprints of the materials from the natural world placed beneath the canvas; or O'Keeffe's depictions of flowers. This was just an introductory presentation to give them an idea of the possible paths of research they could follow in the process of their work. Students could also explore other examples to enlighten questions about the composition of the artworks.

Students that chose the field of biology were presented the physical structure, physiological mechanisms, development, and evolution of living organisms as plants and animals. Students could explore examples to enlighten questions about the diversity of structures in the natural world.

Students engaged in the field of mathematics were presented contents about measurements and the systematic study of shapes of physical objects, emphasizing on the notion of symmetry and proportions, particularly the golden ratio.

Within the three groups students were given an introduction exercise to ground the approach to the contents they were asked to use during their activities. Because the main field of study was art education, all students were asked to create an artwork choosing the aspect of the problem they were interested in from the point of view of the three different subjects.

Then followed the group work. Each group worked independently, not knowing about the themes of the others. This approach was merely intuitive as these works only functioned as a motivation key that should lead to a deeper and concrete research of the contents.

The students were not given any particular instructions about the organization of work within each group. All of them used the World Wide Net to collect information and used social media, Facebook and Twitter, to communicate ideas among them. During the analysis of the results, after the completion of the project, they all reported that closed groups were created, where each of them could upload any contents.

Students were then asked to make photo albums, drawings, and presentations out of the gathered material. The photo albums had to construct logic stories, with a structured clear development of their narrations. They also had to include multisensory addressing to different senses.

The students of the art history and theory group analyzed examples of artworks that dealt with nature in different ways in the motifs; many of them produced their own works, scanned or made photos, and posted them, adding notes that helped to construct their individual stories.

Students that chose the field of biology analyzed the physical structure of many animals and plants. Students explored examples to enlighten questions about the diversity of structures in the natural world. Because the project was launched in art education, they focused their attention on composition, symmetry, and the relation between the whole and its parts.

Students engaged in the field of mathematics engaged in the analysis of different shapes and volumes of physical objects, emphasizing on the notion of symmetry and proportions as the golden ratio.

At the second phase, students had to elaborate the information. Aspects of creativity like sensibility in discovering problems and understanding aesthetic structures, imagination in the redefinition of the role and value of elements, aesthetic elaboration and planning of ideas and solutions, fluency of ideas, and flexibility in the arrangement of the means of expression were of particular importance (**Figure 2**).

Students from each group did not know anything about the work of the others. This was an important condition of the work, as we did not want any group to be influenced by the material gathered by the rest. It is important to stress on the fact that the contents were new for all the students.

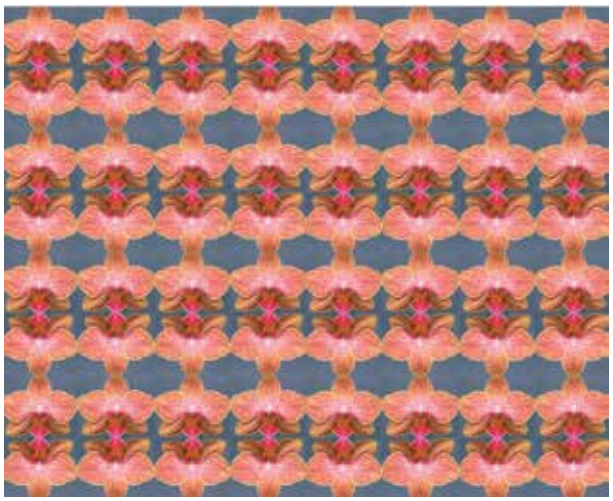

Figure 2.
One of the final artworks based on biology and math.

Figure 3.
Picasso's Bull's Head.

At this point of the project, when all the information in the three groups was put together, all the participating students were allowed as members of the groups created in social media. The most interesting for them was Facebook because of the possibility to create albums of photos in an easy way, copy, and reuse them in new contexts and with the digital tools they were competent to use.

The visual stories students created linking the information required elaboration and planning of ideas and solutions, and originality, which meant unusual

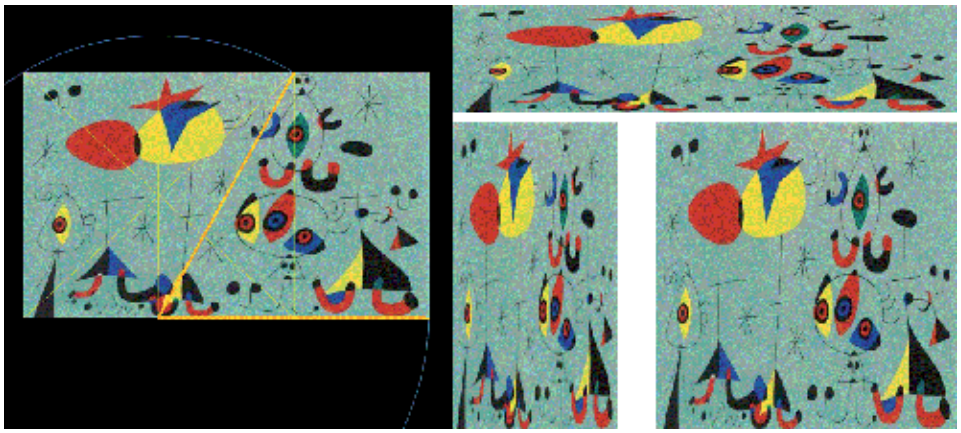

Figure 4.
One of the works done by the group art history and theory, analyzing and reshaping Miro.

Figure 5.
Materials collected by the art and theory group gathering information about the work of Brumen Čop.

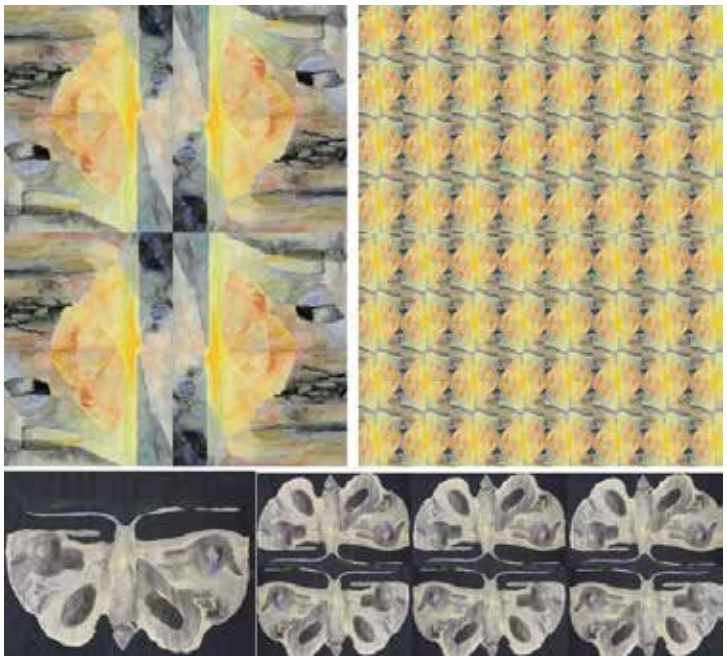

Figure 6.
Reshaping Brumen Čop.

strategies when solving the problem of presentation of the results using multimedia. Interchange in social media, creating a story out of the collected information, from different viewpoints was a part of the challenge. The short and essential story of understanding the meanings and scope of the contents should lead to a new original and wider story. In the end, they had to upload their works in a new created group and create an activity or task to consolidate the knowledge gained as a final exercise.

In one group, students made white/black copies of the patterns they created using different kinds of symmetries in orchids which were offered to the others to be colored in variations of color combinations. Another group found interesting Picasso's Bull's Head and compared it to the image of a real animal (**Figure 3**). They proposed to write an essay entitled "What would Picasso have done with my bike?". They wrote the first paragraph and asked the rest to complete the story. A third group worked with surrealist Miro's painting Snob Evening at the princess, and after verifying it was done on a golden ratio format, they proposed to have a look at what it would have looked like if it was not (**Figure 4**). Similar operations were made on the basis of the collection of paintings entitled Moths by the Slovenian painter Andrej Brumen Čop (**Figure 5**). The images of the chosen art works were reshaped in order to create new artworks based on the knowledge and experiences gained in biology and math. Each group picked a different kind of narrative to present the results of their work and to engage the rest in the creation of a new story. This last part was relevant to gain interest and attention and arouse the emotional engagement of students when finding unexpected answers to the proposed tasks (**Figure 6**).

6. Discussion

Upon completion of the course using transmedia storytelling with cross-curricular integration, the students answered short survey questions. With the questionnaire we wanted to find out their opinion on the approach used.

The students praised the gradual integration of the introduction of an individual strategy for solving tasks and the individual choice of fine art examples and artistic motifs. They expressed the opinion that they were mostly motivated by the surprise of the unexpected connections between the contents and the perspective toward the different subjects from the point of view of the general artistic, aesthetic experience. They were also motivated by the use of known concepts and contents in different and new contexts.

Art students are in general reluctant to natural sciences and mathematics. For some, they are not easy to understand, and their performance in these areas of study is not as good as in other subjects. They are thus less motivated and a priori think they will not be successful when given tasks from these fields. In this case, many students stressed on the fact that linking contents based on art and through their main ability which is focused on visuals was encouraging and opened a new perspective on how to look at natural phenomena. In this way they reached higher levels of cognitive functioning, understanding, and use of analysis and synthesis than when they were taught in the classic way. They needed the opportunity to compose and communicate, replicate, and challenge the stories told about their work through different media. In this way we can assure that social media should foster inclusive approaches for all types of students, performing personal and public expression and connection [36].

The responses of the students showed a strong sympathy for the approach used, mainly because of the possibility that each person can create his/her own positions and in his/her own way, suggesting solutions for artistic tasks and expressing the interests, wishes, and expectations and performing in their own way. That was mainly because each one felt that diversity is a possible and positive value.

This method does not primarily demand hand skills but, instead, a high degree of accuracy when designing the goals of every operation as well as regarding the final products. The designer-student and the teacher as well had the important task of critical evaluation: deciding between a wide range of possibilities and the necessity to choose the right and most appropriate variant. Being able to be critical implied skills demonstrated in different fields.

Transmedia narrative is quite a complex strategy in the context of a pedagogical process. On one side it offers a wide range of possibilities based on the everyday experiences students have in social media. In this case they mostly used Facebook and video conferences. These allowed them to contact in distance and be able to meet in virtual space at any time. The fact that they created closed groups without the presence and control of the teacher was also something they liked. They could freely express their ideas and manage the information and ideas they produced without feeling they were evaluated at all steps of their work. What mattered were the final story and the possibility to construct it in the way each group desired. They could be critical and make changes as it was a kind of work in progress. They very much appreciated the fact that their stories did not end in a multimedia presentation but they had to upgrade this step offering their mates the possibility to conclude them in different ways and using various channels to share the results. For some students that do not use social media so often or are reluctant to their use, because they feel they are constantly exposed to unexpected reactions, the task was not so easy. Creating close groups in which they felt comfortable and safe made them more confident, and in the end they were amazed by the different paths to which their works led. This combination of individual and communitarian was a great experience for them because it showed them how they could enrich their visions about the contents and the ways in which they could follow a satisfactory process, enabling them to learn more and in more appropriate ways.

The transmedia narrative learning process gradually included the possibility of introducing an individual strategy for solving the proposed task, the use of new concepts, and contents in different contexts, which certainly played an important role in the successful completion of the work. In this case, the surprise in the unexpected links between the content has also played an important role in students' motivation. Motivation opened the possibility of accomplished attention. On this basis, students could point on the contents in the ways they believed would be the most efficient. Emotional arousal was actually a particular state associated with their thoughts, feelings, behavioral responses, and positive or negative experiences, linked to their particular learning styles. Cognition, especially from the point of view of the interpretation of events or data, is an important aspect of emotion, and this is essential in the process of learning. This could be verified at all stages of the learning process.

Undoubtedly, such instruction is a special way of organization; it requires a lot of flexibility in planning and evaluating the results of the work. Our own ideas about what we expect from the learning process should also be adapted. Dialectics among successive experiences that involve teachers with their own experience, professionalism, organizational skills, knowledge, and intuition for individual leadership and the student who interprets and builds a picture of the world are derived from the way each one accepts the world and assembles elements into a new whole with meaning in a particular, renewed context each time.

It is also necessary to consider the conditions under which we can ensure the success of using such an approach to work: an atmosphere that motivates and facilitates the expression of opinions and feelings, appropriate preparation of the physical environment in which the activity takes place and didactic material, and a combination of different forms of work, by providing temporary privacy and at the same time diversity of expressed ideas. Finally, the readiness of the manager of the activity is extremely important, which is supposed to be known to him/her both theoretically and practically, from his/her own experience.

We can conclude that it is in fact of little consequence if we plan to connect different subjects in a unidirectional way: the motivation for the artistic activity is greater if the subjects of the learning process have the possibility of generating their own learning strategies, while linking the visual content with others, which are essentially a source of internal motivation. This statement was confirmed by the students themselves in answering questions on motivation and in valuing art products at the end of the artwork. The presented work strategy requires the teacher to have a good knowledge of the content of related subjects and sincerely believe in the possibility of an integrated view of them. Cross-curricular integration is therefore a challenge and an opportunity for internal motivation of the teacher at work and professional and personal growth.

During the discussion, teachers admitted that they had to adapt to this model of teaching and learning in a space which did not offer them the safety of the classroom where they can monitor and assess all the activities of the students. As stated before, the final evaluation of the achievements accomplished by the students demanded a specific approach that was in fact new for them.

7. Conclusion

Many school programs are still organized following a schema in which different subjects are watertight compartments, entirely separated from the rest of the structure of which they are part. Many times the key reason for the loose of students' motivation is precisely the abovementioned consideration of contents,

isolated from authentic contexts and not linked to the interests and expectations of students. The need for individualization of the educational process demands creating flexible, alternative, and dynamic teaching and learning strategies. Creating transmedia narratives is reliably one of these.

Experience is not a mere perception from the outside world. A dialectic view presupposes that experience is formed on the basis of exchanges between sensory perception and reflection. A perceptive experience becomes an experience only through an interpretative process. Some life experiences, e.g., an aesthetic experience, can transform a person if he/she recognizes a particular type of experience in it. This was another fact acknowledged within the presented project.

"The aesthetic experience differs from general experience because it is holistic and unique in nature and includes the whole human personality" [37]. "The aesthetic moment is one of the basic moments of human experience and artistic expression is one of the basic ways to beautify and enrich life. Every perception of aesthetic rather than epistemological nature is more cooperative than passive, and encourages man to the kind of possibilities offered by the environment. Aesthetic experience implies an enriching notion of democracy, communication, education, a nearly religious experience. In the work of Art as an Experience [38], Dewey says that "the task of aesthetics is to reintroduce continuity between pretentious and powerful forms of experience, such as works of art and everyday events. There must be a continuity between art and every day, ultimately also universal events of life" [39]. Therefore, the current aesthetic experience dictates the dynamics, which is characteristic of all artistic forms.

The multisensory orientation of transmedia narratives as pedagogic strategies is congruent with contemporary trends in arts, which permit art educators to facilitate the aesthetic imagination necessary to engage in and to participate within contemporary arts and cultural experiences as well as appreciate and understand the history of arts and culture in a much more holistic way [40].

The presented work strategy actively involves participants in the learning process, which increases motivation, personal engagement, and open contradictions between their own and others' experiences and between goals and processes. It helps to change consolidated positions, extends the perspective of looking at certain phenomena, and helps to connect in other conditions' separated aspects, cognition, emotion, and action. We could say that it realizes Dewey's thoughts that when we look, we could add or create an artwork, an emotion, and a thinking that work together in their perceptible and sensual connection, so experience is the complex in which the world opens and gives us meanings and values also in a nonverbal way.

The sensorial experiences of sight, hearing, touch, and their combinations are limited in virtual space [41]. In fact, the evolution of media technology tends to present things as realistic as possible; however, physical interaction is not possible, as well as the inclusion of nonverbal signs like body language or the real context of the sensorial experience. "New technologies are constructing a particular kind of viewer that is screen based" [42]. This definition can also be extended, at least to a certain extent, to contemporary students.

Art education in the twenty-first century faces contradictory challenges. On the one hand, it is necessary to improve experiences using all the possibilities offered by new media; they facilitate spatial visualization and many operations that are practically impossible to undertake without the use of them. On the other hand, it is obvious that a global sight on the pedagogical process of art education demands the inclusion of a new, specific way of accurate evaluation of three-dimensional haptic activities that would enable students to experience the actual characteristics of materials, which are neglected by screen media. In fact, the understanding of past as well as contemporary art products demands a set of complex and rich

experiences, which is one of the principle objectives of education at all levels. Transmedia narratives, because of the potential use of different distribution channels that are in fact not necessarily connected with screen media, offer a wide range of possibilities tying the real and the virtual in specific modes.

The barriers that once separated the different fields of art no longer exist. New technologies brought an entirely new range of experiences and possibilities. The dynamics of sociocultural changes affect artistic expression; debates about the cultural identity of minority groups, issues of national identity and gender, development of technological means, and the postmodern philosophy of fragmentation and plurality reshaped assumptions about education. These transformations affect the way we approach and learn about art. The traditional dimensions of learning are still present in our expectations and practices, but at the same time, we search for alternative concepts. Old paradigms based on technical skills, which prevailed when the subject found its way in school programs two centuries ago, encyclopedic knowledge, or mere self-expression are not responding to the demands of the society anymore. Sensorial images are present all around us, and we must respond to them, making decisions that involve creativity, originality, spatial visualization, motivation, and imagination.

To give art education its proper place in general education, it should embrace far-reaching holistic forms and practices that can be critically examined through interdisciplinary, multidisciplinary, and transdisciplinary methods associated with contemporary educational strategies as transmedia narratives are.

The aesthetic dimension is a unique process of cognition that can be developed by art education in the school context.

The meaning of the presented research can be seen in a broad context: major changes in the perception and evaluation of events in the art world, which occur parallel to relevant changes in the school environment, rapid functional changes in the lives of today's students, and the responsibility of teachers as managers within the reproductive machine that school necessary still is in the system of the ideological apparatus that rules our present world.

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This chapter is a kind of synthesis of my work during the past years. I'm really grateful because I managed to complete our text entitled "The Potentials of Multisensory Emotional Arousal in Teaching and Learning Contexts using Transmedia Narratives in Education." The assignment could not be completed without the cooperation from colleagues who understood the importance of the challenge. I sincerely thank Barbara Tacar and Samo Amon for their critical ideas and encouragement in completing the research and Andrej Brumen Čop for letting me use his artworks within the tasks given to the students. Last but not least, I would like to express my gratitude to the students and teachers that participated in the project. With them I hope we will be able to promote changes in the way art education processes are conceived and implemented being our main goal to develop creativity. Without creativity, we cannot imagine the future life of our students.

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Chapter 5

ArDIn. Art, Design, and Engineering Merging in a New Method

Silvia Nuere, Laura de Miguel Alvarez and Raul Diaz-Obregon Cruzado

Abstract

Teaching technical drawing to fine arts students in 2001 is the beginning of an idea that searches for an integration of different fields of knowledge. Life brings you then to teach artistic drawing to industrial design engineering students and, therefore, to face again the difficulty of merging into one concept: art and science as a whole. So lets introduce a better connection with the professional world into our teaching-learning process. In 2011, Silvia Nuere created a scientist journal called *ArDIn, Art, Design, and Engineering* to promote the STEAM approach to learning. Art, design, and engineering must configure the basic elements of a new way of understanding not only the teaching-learning process but the way of being in the twenty-first century. ArDIn becomes then their method to involve students in the necessary integration of art and science through a constant dialog and critical thinking. Between the educational contexts, we want to point out transmedia narratives as a movement that enhances the creative process. We need to be opened to new proposals as well as going further looking for connections beyond media. Through this project working interdisciplinary, we prepare students remotely for their story in a possible transmedia format.

Keywords: ArDIn [ˈɑːrdiːn], art, design, engineering, STEAM, visual thinking

1. Introduction

The authors have designed this methodological paradigm. Their identity is a set of three things closely or especially linked to each other with a background as artists, teachers, and researchers [1]. Thanks to their teaching experience in engineering at the university, they have naturally configured a way to proceed in the classroom intimately related to the artistic and researcher dimension. Graphic expression and creativity subjects conform the beginning of a new thinking process.

On the one hand, the artistic dimension coming from their study background promotes the creative development of teaching materials as maps, visual statements, or presentations. On the other hand, the researcher essence deals with the concern of improving their teaching work immersed in various educational innovation projects. These projects are related to the ArDIn approach, as well as the generation tools, to encourage students' self-evaluation. The rubric self-assessment

tool is created as a tool for spreading their practice in contrast to other patterns and workshops.

As previously mentioned, this work has been developed in class within the design field. Nevertheless, doing so in different knowledge specialties has given them a teaching global vision, highlighting interdisciplinary nature. The interconnection of disciplines, when it comes to connecting learning with life and the future professional performance of students, is worth it.

After more than 18 years of teaching, the authors have been able to create an educational intervention model that raises the image importance in all their teaching-learning process. It is also important integrating artistic poetics and movements. Diverse creative advancing approaches can be transferred to a design project. Students can understand art creation as a bunch of possible solutions and the wheel that can help to innovate and converge into a good design.

Lately, the visual presence in these educational experiences has been important to forge student's view inside their knowledge improvement. But teachers have also transformed their students' reciprocal relationship widening their approach. Images are essential for understanding the concepts taught in the different subjects.

Projects offered in the different subjects taught during these years have been adapted to the profile of each group, to their educational level. The works collected in this long period are what today has become a real shared learning process evidence. According to Pence (2012), transmedia in education can be not just the use of a variety of media but also the need for the students to interact with the narrative. Framework transmedia is not only a new way to involve audience but also a favorable scenario to promote new interactions and ways of the teaching-learning process [2].

The main points will be illustrated by different experiences done all over the years. This will be the way to understand at a glance the ArDIn methodological paradigm. Selected experiences will then be presented as different visual results [3], giving importance to the visual to be faithful to how these proposals were presented and developed by teachers and students.

2. Research method

Thinking about design, it is interesting to deepen in its characteristics to find some aspects that could guide the specific methodology for this investigation. As Conde [4] specify, there is a clear relation between design and creativity. The characteristic of their nature determines this relation. He continues specifying that practicing creativity must be a transversal and multifaceted phenomenon and must not be reduced to a simple group of techniques. The most important is to encourage critical minds, to follow a divergent model of thinking, that is to think outside the box to deal with problems.

The UNESCO [5] recommends education to follow a creative and renovated model. Creativity and innovation are essential tools for the twenty-first century.

As designers, artists, or engineers, there is a common behavior. When a problem arises, they will have to face it and look for the best solution. As a parallelism, taking into account design thinking, we can face problems following this method. Experiences in classroom become a field of research. Diverse problems arise every day. Try to define the problems. Think about specific characteristics, about your students and their needs, and define, according to your taught subject, possible solutions. And finally put it into action.

This method is proposed to solve problems in a wide range of areas and companies [6].

The method followed is qualitative; deepen in the personal world of people in order to interpret their situations, what do they mean for them, and what are their intentions, their beliefs, and their motivations. These motivations and expectations of the education process can be studied through this method [7].

The main characteristics of this method are the following according to Bernardo and Calderero [7]:

- Inductive: conclusions are obtained through particular information.
- Ideographic: specification and particularity are really important.
- Descriptive: any data is important (words).
- Realistic: must understand reality with its values.
- Humanistic: knowledge and particular lives are taken into account.
- Interactive: it is natural to interact with all the persons involved in the process.
- Rigorous: what is heard or watched is checked with the data written down.
- Genuine: every researcher creates its own research process. They follow general orientations not concrete rules.

Following this thread, a holistic model emerges to put into practice in the classroom. Holistic education becomes an axis of human being development [8]. Even though the authors promote the holistic education research in the field of art, it can be extrapolated to the design field. The main objective is that "students can examine, identify, approach, analyze and live with intensity to establish a link with another spheres that have never dealt with" [8]. Students can become the main subject of the innovation process; they can participate and be part of a new way of teaching.

3. Educational context and skills

The context where the authors have included their proposal is in Europe as a global space where education will take place.

In the general information about the Erasmus+ Program, tackle socioeconomic changes that can be afforded through education [9]. As one important clue, education can enhance intercultural understanding and a sense of belonging to a community. It is also mentioned that young people should participate actively in society, in line with the provisions of the Lisbon Treaty to "encourage to participate young people in democratic life in Europe" [9]. Youth is essential for the future, as they will become the workforce of every country, and therefore they should participate more actively in their studies. Cooperation across different fields and levels must also be introduced in the process of learning.

Following the European transparency and recognition all over the countries, some tools have been created, as the European Credit Transfer and Accumulation System (ECTS), to facilitate recognition, better understood, within and across national borders.

The framework will be focused on the Key Action 2 of the Erasmus+ Program: cooperation for innovation and the exchange of good practices [9].

This key action supports transnational strategic partnerships that aim to develop initiatives addressing one or more fields of education training and youth and promote innovation. It promotes knowledge alliances between higher education institutions and enterprises to foster innovation, entrepreneurship, and creativity.

Another framework will be the Spanish laws referring to higher education. From time to time, the Spanish Ministry of Education, Culture and Sport publishes and updates the so-called *Libro Blanco* [white paper] that indicates the general actions and results about specific matters. In this particular example, it refers to higher education in general and engineering in industrial design in particular. One of the main contents refers to the general and specific competencies [10]. Competence is defined as the knowledge, capacity, ability, or acquired skill, which gives place at an adequate and optimal level of professional performance of engineering in the field of industrial design.

Between the specific disciplinary competencies, there is one that deals directly with the capacity of using manual and electronic tools for the artistic and industrial expression. Other competencies related to the cross techniques are problem solving, oral communication, capacity to organize and plan, or decision-making. Related to the systemic ones, students need to learn and work in an autonomous way, adapt to new situations, and be creative. Finally in the group of personal and participatory competencies, they will face critical reasoning, work in group, and communicate with professionals.

Analyzing the fine arts Spanish White Book [11], we find similarities with some competencies as they are related to general concepts, as, for example, be autonomous in their learning or be creative. In general, the ones exposed for industrial design, are more or less the same, just with some differences in their writing.

Approaching the particularity of competencies adopted by the Polytechnic University of Madrid (UPM), where the research takes place, creativity is between others, common to all their degrees [12]. Creativity is defined in an engineer way as the capacity of solving, in a new and original way, problems or situations of the engineering field. Even though they define it in an engineering field, there are different ways to face problems, and design thinking can be one of them.

Connecting to creativity, we also focus on the transmedia narratives as a way to promote new ways of learning, outside classrooms and in consonance with the twenty-first-century technologies. Making a parallelism with Henry Jenkins (2003) statements, "the current structure is hierarchical and we need a model for co-creation rather than adaptation of content that crosses media" [13], so there is a lack of common language or vision that could unify high education old models with new media [13].

In a wide sense, we can consider the definition given by Laura Fleming (2013), "transmedia learning is the application of storytelling techniques combined with the use of multiple platforms to create an immersive learning landscape which enables multivarious entry and exit points for learning and teaching." But this new model can go beyond the classroom, taking the pedagogical principles from constructivism and letting students build new personal learning frameworks.

4. ArDIn paradigm

ArDIn proposes a paradigm with artistic procedures organized and interrelated with engineering and design fields to promote new knowledge contexts. Teachers and students will work in a horizontal and collaborative way in engineering concerns.

An image of a molecule is a perfect way to represent visually the proposal. The organization is a set of atoms attached through chemical bonds that result in a stable set.

ArDIn is presented with a form that can remind this molecular organization, albeit with its own singularities.

The first singularity refers to the contexts in which ArDIn is given. These are areas of teaching in which design is present, since the challenges faced by their students force them to act transversally between theory, technique, creation, usefulness, and innovation from the first day of class. Configuring the profile thinking of these students, necessarily divergent, must predispose them to keep an attitude to explore, know, analyze, combine, and, above all, learn. This motivation is essential to activate ArDIn method as "creative confidence." This means facing the challenge without fear of being wrong, with certainty in their possibilities, and being aware of their limits and virtues.

The second singularity is about teachers from fine arts matters proposing activities to their students that guarantee a playful experience. The aim is to connect them with their reality and force them to work creatively and in an interdisciplinary way to make meaningful learning [14].

Another unique characteristic of the ArDIn molecule is that it can be fragmented and configured in new arrangements keeping its balance, contrary to what happen to chemical molecule (**Figure 1**). In these cases, the new arrangements are subject to the contexts in which they occur, adapting to the profiles of the people who live them. Therefore with each educational experience, a new shape of the ArDIn molecule is created.

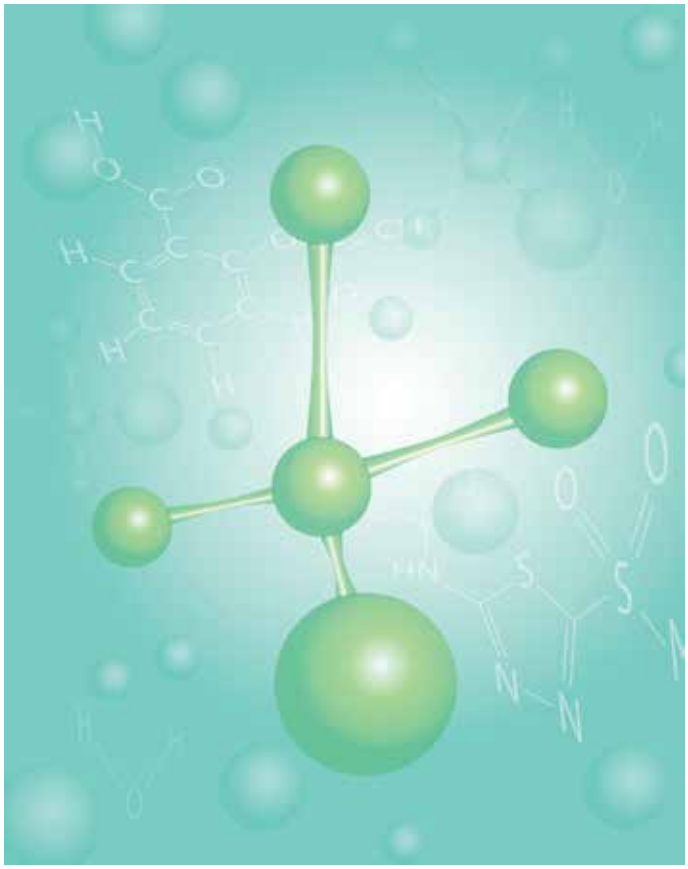

Figure 1.
Three-dimensional computer graphic simulation of a molecule (Silvia Nuere).

5. ArDIn work diagram

After years of teaching in different studies concerned as fine arts, fashion design, architecture, engineering in industrial design, and product development, some main concepts have arose as fundamental in the teaching methods. These main ideas related to the process of teaching and learning are the following ones (**Figure 2**).

First, whenever you are teaching, you may consider different matters of knowledge to strengthen learning. **Interdisciplinary nature** is essential, and searching new connections while teaching will enrich the process. This means, whenever possible, try to organize mixed classes between different subjects thought in your university school.

Thinking about teaching-learning experience, both actors in action, teachers and students, may be situated equally, which means in a **horizontal** plane. Obviously teachers are expected to have more knowledge due to their experience, but students are freshly in contact with the present moment, so they can benefit on each other.

In continuity with the previous aspect, we also propose a **collaborative** teaching-learning experience. It is not only a collaboration between teachers and students or different subjects in the same university school. It must also include different university studies. Last year took place an innovation project where teachers from architecture, fashion design, and industrial design worked together with all their students mixed into one unique goal.

And finally, it is supposed that when students leave university, they will start their professional career. Nevertheless, we find there is a big gap between what they learn and what they will be asked to manage afterward. So let introduce a better **connection** with the professional world into our teaching-learning process. They will face different approaches through different projects proposed by companies.

Figure 2.
General ArDIn work diagram (Silvia Nuere).

All this background must take into consideration that a **fun environment** is essential to create a good atmosphere. Even though we are reluctant to behaviors similar to children, humans will still play from time to time. Some words from David Elkind are important at this moment:

> *Adults respond so negatively to play because they define it as simply having fun and, therefore, as a waste of time. But though play can be fun, as one of the three essential drives—love, play, work—it contributes to the best kind of learning. Play operates as more than a creative urge; it also functions as a fundamental mode of learning. [15]*

The exhibition "The Game of Art. Pedagogies, Art and Design" held in the Fundación Juan March in Madrid, starting in March 2019, emphasizes the importance of playing while learning. Ellen Key forewarned about the way children were taught in schools, with their rigid organization. Another study done by George Land and Beth Jarman in 1992 [16] pointed out the divergent thinking children have at an early age and how they lose it while growing up. This ability of inventing many and different answers must be adopted as a strategy to learn and innovate in design.

Pat Kane, musician and cultural commentator, always repeats that, in the twentieth century, game will do the same function as work did during the industrial era: it is going to be the predominant way of knowing, making, and creating value [17]. As McLuhan said, "Anyone who tries to make the distinction between education an entertainment doesn't know the first things about either" [18].

As a clear example of a fun environment, it can be showed a color exercise made in a drawing class. It related to the expressionism approach where they face some big blank papers, using their bodies and getting familiar with mixing colors. The following is the link to one of these experiences done in three consecutive years, 2017, 2018, and 2019 (Video: https://www.youtube.com/watch?v=hTRi72q4k88&feature=youtu.be).

Transmedia narrative is also essential as a background to take into consideration. Students are constantly in contact with media and will not let them besides. Teachers, no matter their age, will need to face new ways of teaching using new technologies, not as mere tools, but as fundamental part of their strategies into the classrooms (and also outside them).

And other important strategy to manage this new era is to use student works as evidence for future students. The projects already done by them conform the real textbooks for future courses. Their experiences and their research while doing them deem essential for others, and in the future, students could become occasionally

teachers. The ETSIDI Design Association has already collaborated with the authors in teaching and assessing.

After exposing the main fundamentals of the ArDIn method, always surrounded by a fun and relaxed ambience, the different outlined concepts will be expound. Some real examples developed in the classroom, or outside it, will illustrate them.

6. ArDIn basis

All the ideas exposed are shown independently, they make up of the whole ArDIn concept method, though. This is not a closed structure, but as said in the introduction, they can change, adapt, grow, and sum up as they need while they carry out in a more complex molecule.

6.1 Interdisciplinary nature

Since 2001, facing the need of transferring technical drawing ideas to fine arts students, the idea of making teaching subjects in a wide range has been essential and compulsory. Fine arts students were reluctant to face technical issues, as for example axonometric perspective or other more difficult as dihedral system. The interest then was not only teaching the main concepts of the descriptive geometry but also showing the interest of introducing this way of seeing in their personal artistic work. They could learn how oriental artists are more prone to use axonometric drawing in their paints or cubist artists opted for the dihedral system.

Later on, at Universidad Nebrija, in 2005, the experience was inverted dealing with engineers facing a subject related to artistic drawing, as well as in the Polytechnic University of Madrid, in 2010 with a specific subject called "Artistic drawing." The main purpose was to introduce a different way of facing their studies in a more creative way.

In any case, the main goal wasn't teaching these artistic concepts in an isolated way but integrating the essence of each one in the other. From the beginning, the **interdisciplinary nature** was essential to better deal with any matter (**Figure 3**). Nowadays we try to integrate other subjects or approaches into one. The authors have worked with architects, engineers, chemists, and fashion designers, always following the STEAM mainstream, introduced by the Massachusetts Institute of Technology. Art has found a place between the other starting concepts like science, technology, engineering, and mathematics. They believe that art is essential to the creative environment.

Related with art, we propose sketch drawing as a fundamental tool to transmit ideas and the image as a worth value to understand the world surroundings. Thinking can be afforded by a visual process instead of dealing with words.

Since 2017 the authors have carried on three innovative projects. One of them is a narrow collaboration with the Fashion Design degree at the fashion design school of Madrid and the Architecture Fundamentals degree at the Polytechnic University of Madrid. All approaches were project-based learning, project-based challenge, and service-based learning, integrating students from different degrees and different year courses.

In one of them, students from architecture, fashion, and engineering in industrial design had to organize a fashion show, starting from choosing the fashion designer to their specific collection. They propose an architectural space to take

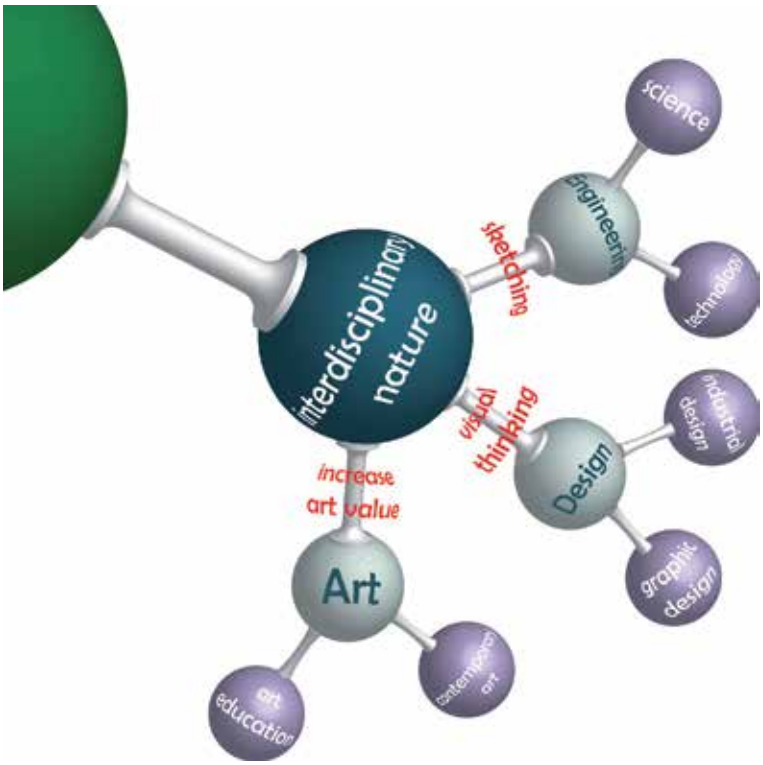

Figure 3.
Interdisciplinary nature diagram (Silvia Nuere).

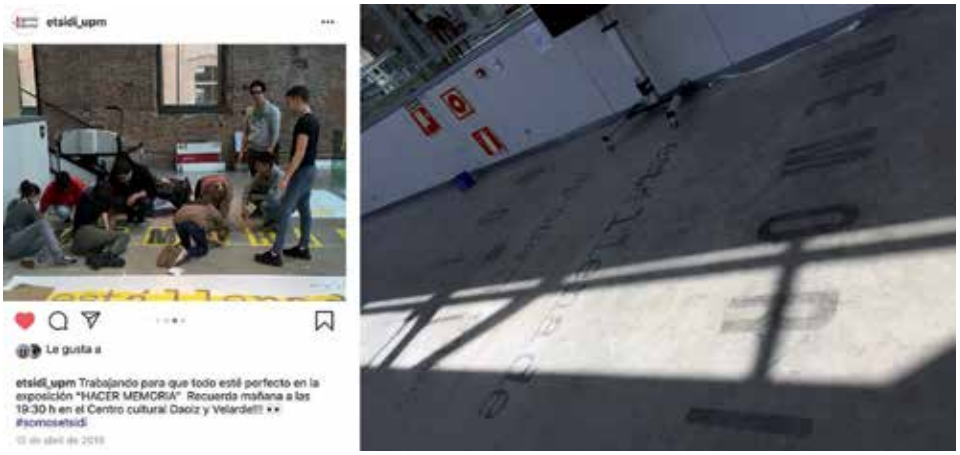

Figure 4.
Art piece process and final work (Etsidi and Silvia Nuere).

place and also design some furniture or element for the event. Students worked in an autonomous way in mixed groups. In the end, the Madrid Fashion Design Week Director assessed all the projects during a group activity.

In 2018, some students participated in great collaboration with a teacher proposing an artistic piece to be shown in a cultural center in Madrid. For most of them, it was a new experience, and in the end they enjoyed it a lot (**Figure 4**).

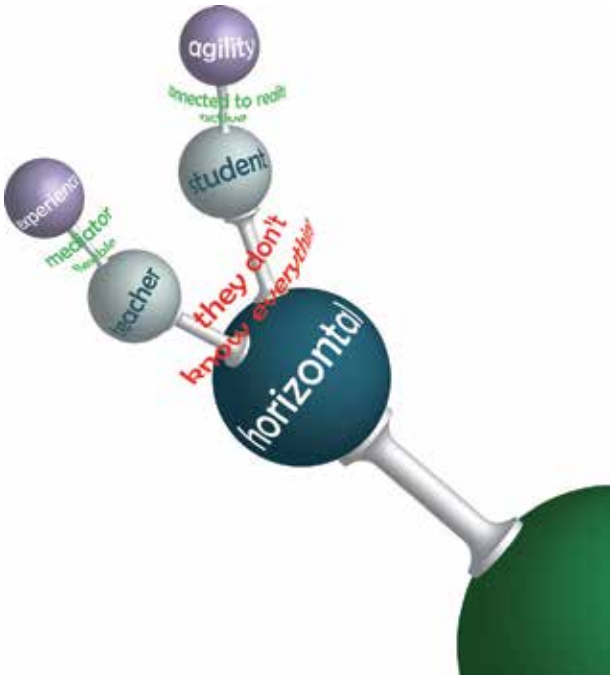

Figure 5.
Horizontal teaching-learning diagram (Silvia Nuere).

6.2 Horizontal teaching-learning

Teaching in the twentieth century brings new ways of facing our job because of the facility access to information through the Internet. Our students, nowadays called digital natives, are well communicated and connected to the world through social media, and they use the Internet as part of their social environment and life. Obviously, teachers can have more knowledge because of their experience but sometimes are far from reality or are out-of-date.

Teacher experience will work as a mediator in the student learning process and must be open to new challenges, be flexible, and be far from the classic master classes. An interaction between both of them will bring new expectations. More than transferring knowledge, teachers must make sure that every student has enough curiosity to deal with new experiences and the knowledge inquisitiveness (**Figure 5**).

Some of the most explanatory examples are the ETSIDI Design Association [19] managed by some students of the Engineering in Industrial Design degree at the Polytechnic University of Madrid. In 2012 through another Educational Innovation Project, a design blog was created. This blog has evolved to a professional design blog where students are the only people in charge. They elaborate all the information published, in the fields of industrial design, creativity, and visual culture (**Figure 6**). They have not set barriers to the industrial design concept and have gone further considering visual culture as a whole immerse in a creative world.

This experience and post production as a design blog can be seen as a learning extension, inside a transmedia narrative, where students manage their own blog, related to school, but with complete freedom to upload the contents. Teachers are no longer in charge of the blog, and as new students are told about it, they become new members and new content generators.

This association also organizes silk-screen printing workshops for the school students and courses related to technical skills as the use of specific drawing

Figure 6.
ETSIDI Design main webpage.

software. They start teaching while being students, and they reinforce the classes received from teachers.

6.3 Collaborative teaching-learning

In a close relation with the previous theme, there is a collaborative proposal in different ways. The horizontal teaching must also include synergetic approaches. We have also mentioned working with other degrees, but it is also interesting to look into your own school to force intersubject working combinations. As we defend cross discipline, we have to find synergies between subjects taught in our school (**Figure 7**). Only in that way, they will understand the importance of the interdisciplinary nature.

In the year 2013, in the basic design subject, we proposed to design a dinosaur 13 meters long by 7 meters high. It was an exercise dealing with making a figure made only with cardboard triangles with no structure inside. Students worked in groups, and for the final assembly, we rely on the mechanical resistance teachers to secure the figure. Some days after, this dinosaur made part of a fashion show (**Figures 8** and **9**). Two years later, we built, in the same way, a giant octopus that occupied the whole entrance of the school. An engineer teacher made a 3D movie scanner to visualize the animal, showing the power of this technology and a way to spread the work done by the students (**Figures 10** and **11**).

This year, chemistry teachers have taught a ceramic color master class to our design students, in order to understand the close relation between both subjects, chemistry and industrial design. They can approach color theory from different points of view, the artistic one and the chemical one, in order to connect both concepts (**Figure 12**).

6.4 Teaching: professional career connection

In the engineering in Industrial Design degree from the Polytechnic University of Madrid, there is a competency that is common to all the degrees. It is also implemented in the Superior Technical School of Engineering and Industrial Design.

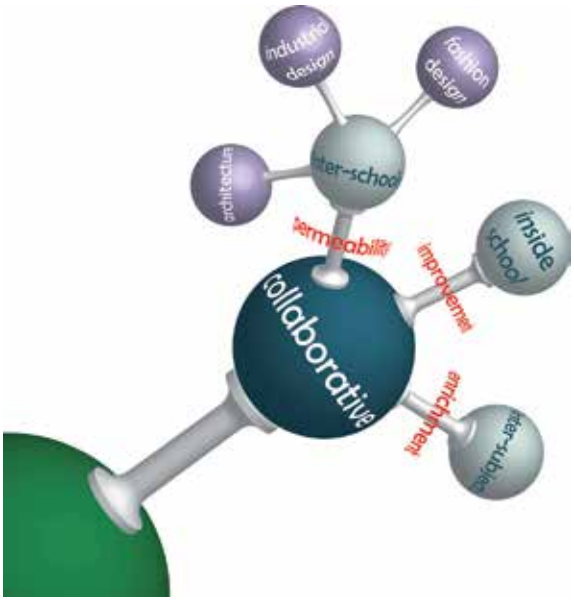

Figure 7.
Collaborative diagram (Silvia Nuere).

Figure 8.
Dinosaur assembly 2014.

Figure 9.
Fashion show 2014.

Figure 10.
Octopus cardboard sculpture 2015.

Figure 11.
3D Octopus scanner 2015.

Figure 12.
Chemistry teachers color class.

This is the Specific Competency number 27 referring to the capacity of introducing in their Final Degree Work a professional-based project integrating all their acquired knowledge (**Figure 13**).

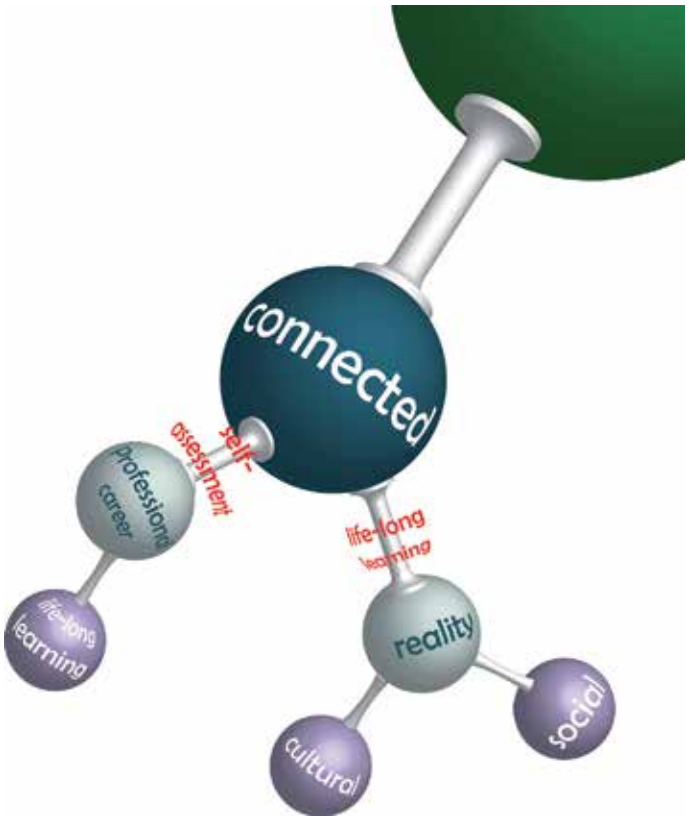

Figure 13.
Reality and professional career diagram (Silvia Nuere).

Students will need to be effective while using media technologies as consumers or generators of content and information [18]. It is not only a question of interacting and using different media while learning but also a new mentality in order to be able to go beyond classrooms, old teaching-learning methodologies, and traditional text materials. Students, while facing their Final Degree Work, will surf the web looking for information. They will need a better knowledge of the media to be accurate in the information they will find.

Finally, thinking about the end of their degree, it is essential to connect studies with the labor market. They learn from different subjects but hardly ever they are in contact with real enterprises to better know what they will ask afterward. It is then necessary to introduce some connections with professional matters so they will be able to face real projects. The question there is to make approaches to real situations asked by companies, sometimes related to some specific contest. As the company wants to launch a new product, they contact the school to propose a real project as one of the exercise they will face in class. This way, companies get new and fresh ideas, and students work on real projects. The authors have already worked with companies related to lamps, bathroom fittings, video games, and others.

In a close relation with the school management team, some students were involved to face new projects. One of the examples was the different intervention in the school spaces to modernize them in an esthetic way. Collaborating in this project, on the one hand, students have considered it more comfortable and friendly, and on the other hand, they have felt like part of the school interests. They

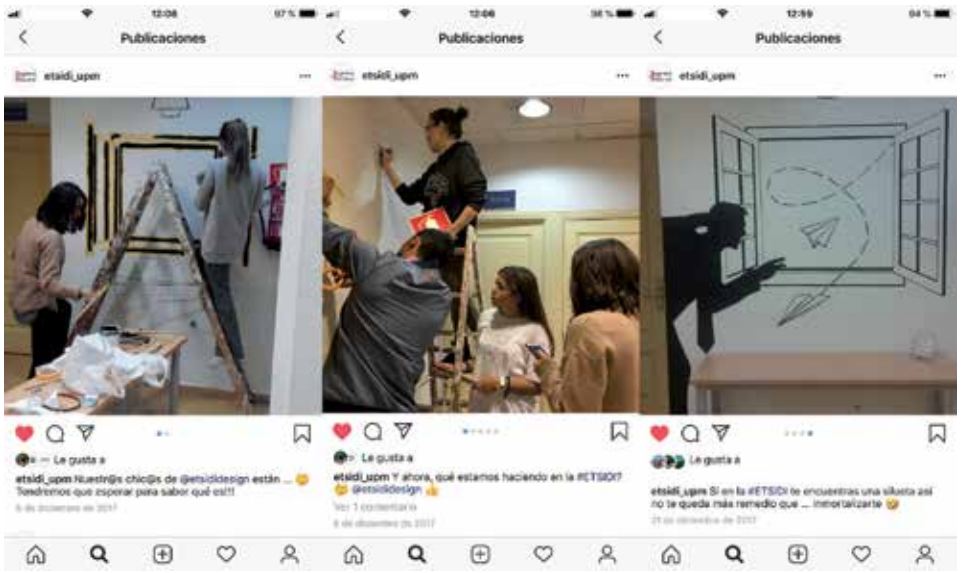

Figure 14.
Murals designed and materialized by students (Francisco Santos).

Figure 15.
Mural work in progress (Silvia Nuere).

have proposed the design to be done in order to improve the different spaces in the school to be updated. They have worked hand in hand with the management team and have materialized their proposals (**Figures 14**–**16**).

Things done inside the school must be spread outside to show to their mates, on the one hand, what students do during the academic course and, on the other, to show other people what is going on and how things change inside the school. New social networks are essential to communicate and to make visible what is occurring inside the school (**Figure 17**).

Something really important too, while working for others, is the ability of self-assess about what they are doing. When they jump into the labor market, they will need confidence and some training for knowing the rightness of their work. According to this matter, the authors introduce, from the first-degree course, self-assessment through rubrics (**Figures 18** and **19**) in every subject they teach.

The innovation learning projects also become a good platform to connect student learning to the professional field, as, in the end, a person from labor market

Figure 16.
Mural designed by students (Silvia Nuere).

Figure 17.
Instagram official site of the School (@etsidi_upm).

Figure 18.
Student self-assessing (Fashion Design School. Laura de Miguel).

Figure 19.
Students self-assessing (Fashion Design School. Laura de Miguel).

will assess their work. Once, as said, was the Director of the Mercedes-Benz Madrid Fashion Week who assessed students and, in the last one, a city council representative did the work.

7. Conclusions

According to the main four points, **interdisciplinary nature**, **horizontal** and **collaborative** teaching-learning process, and the fundamental **connection** to the labor market, it can be said that the ArDIn method has been working in a healthy environment through the past years. The ambiance generated in contact with the transmedia narratives, in a fun environment and taking into account the importance of the well-done work by students as an evidence and reference, makes up the perfect scenario for a different way of teaching.

Related to the first point, **interdisciplinary nature** means that cross discipline must ease the teaching-learning enrichment by integrating other knowledge that can benefit one another. Art and visual thinking will also be part of the teaching background. The intention is to cover with this proposal the competencies shown above through the different exercises students will have to deal with.

According to the recommendations given in both white papers, industrial design and fine arts, there are important similarities in the competencies students must arise once they leave their studies. Art and engineering and design benefit from similar concepts and can work side by side.

Student freshness and teachers wisdom, due to many years of experience, must merge in a **collaborative** and equal step to go further in their teaching-learning experience. The interdisciplinary nature must be taught not only during our classes and our subjects, but we need to interact with other teachers and subjects as the master class taught by chemistry teachers or the interaction with other fields of knowledge as architecture, fashion design, or others.

Both teachers and students must be receptive, be open-minded, and prepare to learn from mistakes while introducing new ways of teaching. This will lead them to the opportunity of lifelong learning. Student and teacher will learn from one another in a **horizontal** level, making profitable all the experiences done in school. Teachers and students make part of a research tandem, sometimes tacit, others in a clear way, but they can both benefit from the process placing them in the same level. There have been some cases where students have become teacher, hand in hand with the teacher or by themselves.

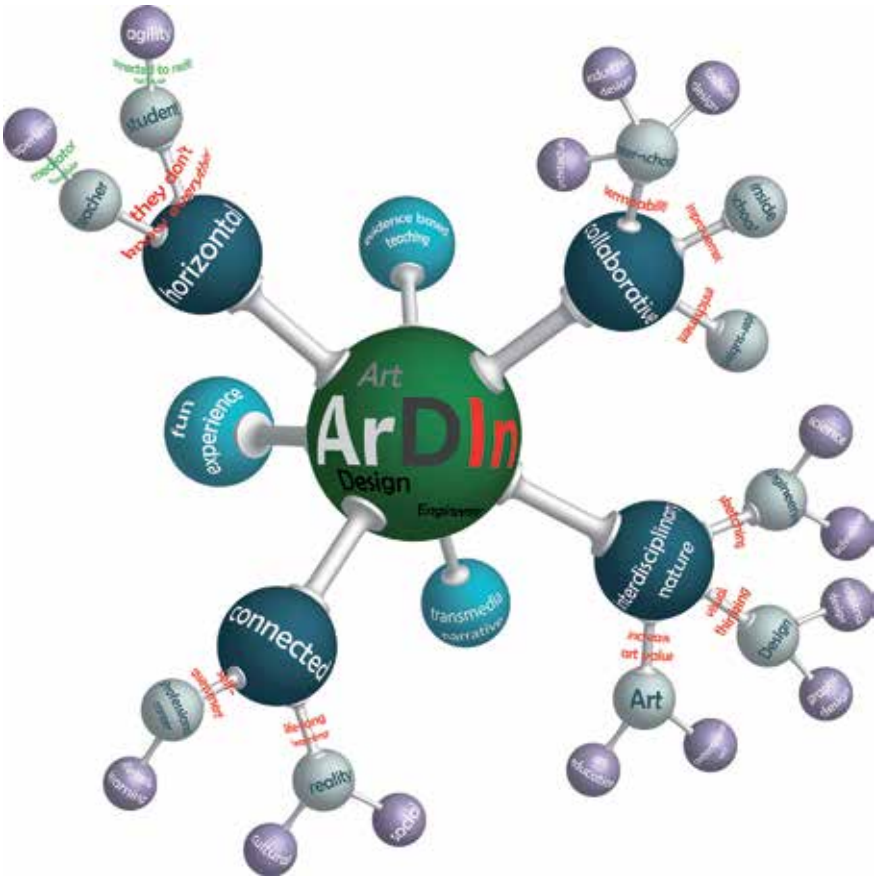

Figure 20.
Final ArDIn diagram (Silvia Nuere).

One of the common competencies a student or person have to acquire is related to the fact of acting in an autonomous way as Riesco explains in his article [20] always thinking about their insertion in the workforce.

Fleming points out that "the world can now be our platform for learning" [18] and "preparing students to succeed require a shift from teacher-centric instruction to a learner-centered culture."

Related to the **professional** connection while teaching, we must not forget that the university is the entryway for the professional career, so students should face real project proposal in close communication with enterprises. As teachers, we can promote other spaces for the activities, as, for example, teaching outdoors instead of traditional closed classrooms. University must work as a real link to their professional career. Some of the commonly heard comments from students while doing their 16 ECTS (European credits) subject called "Enterprise Practice" is that they have received knowledge through classes but they do not know how to act or solve proposed subjects. They find a big gap between what they learned and what they need afterward while working.

Obviously humans are still learning while growing up, so the authors want to increase the need to be in a constant lifelong learning mood, no matter where they are. Self-assessment is a powerful tool to help students understand the hidden details of what a work evaluation is. Giving them objective criteria while doing an exercise will train them for the future.

The confluence of subjects and disciplines in which ethical, egalitarian, and humanistic values are always present is one of the most valuable parameters. One of the results of this attitude was creating a scientific journal named ArDIn (*ArDIn* stands for art, design, and engineering in Spanish words) that intends to attract researchers interested in the same field of knowledge and following the importance of Art in any teaching-learning experience. The authors constitute the working group *ArDIn,* named after the scientific journal, the fruition of teaching experience in fine arts, design in industrial engineering, graphic design, architecture, and fashion design. They support educational innovation in a continuous dialog with the professional world, in which creativity and art are a fundamental part.

As said, the proposed ArDIn method is like a molecule but with the particularity that it can change its arrangement, admit new relations, create new connections, and evolve throughout time. Obviously, teaching, as life, must be open to new challenges and new methods and must be able to face additional "molecules" in this ArDIn method (**Figure 20**).

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The transmedia narrative is a format that will renew interest in reading and stories, and also allow innovation in various educational fields, if you know how to apply and combine with innovative teaching methodologies that support and encourage play. The transmedia narrative offers a new educational and communicative landscape in a society that is discovering the possibilities offered by platforms and new digital narrative formats. This book is written by creative authors and contains many examples of innovation through transmedia narrative.

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