



**UNIVERSITY OF THESSALY
SCHOOL OF HUMANITIES AND SOCIAL SCIENCES
DEPARTMENT OF EARLY CHILDHOOD EDUCATION**

**Studying Children as Digital Game Players:
Interactive Narratives, Frames and Dialogism**

PHD THESIS



Monika Gavriilidou

Volos 2024

**UNIVERSITY OF THESSALY
SCHOOL OF HUMANITIES AND SOCIAL SCIENCES
DEPARTMENT OF EARLY CHILDHOOD EDUCATION**

Monika Gavriilidou

**Studying Children as Digital Game Players: Interactive Narratives, Frames and
Dialogism**

PHD THESIS

VOLOS 2024

Studying Children as Digital Game Players: Interactive Narratives, Frames and Dialogism ©

2024 by Monika Gavriilidou is licensed under [CC BY-NC 4.0](https://creativecommons.org/licenses/by-nc/4.0/)

Monika Gavriilidou

“Studying Children as Digital Game Players: Interactive Narratives, Frames and Dialogism”

PhD Thesis

Submitted to the Department of Preschool Education, University of Thessaly

COMMITTEE

Anna Chronaki, Professor, (Supervisor), Department of Preschool Education, University of Thessaly

George Papakonstantinou, Emeritus Professor, Department of Architecture, University of Thessaly

Dimitris Charitos, Professor, Department of Communication and Media Studies, National and
Kapodistrian University of Athens

Katerina Makri, Assistant Professor, Department of Languages and Intercultural Studies, University of
Thessaly

Charalampos Karagiannidis, Professor, Department of Special Education, University of Thessaly

Dimitris Gouscos, Assistant Professor, Department of Communication and Media Studies, National and
Kapodistrian University of Athens

Katerina Mihalopoulou, Professor, Department of Preschool Education, University of Thessaly

ΠΕΡΙΛΗΨΗ

«Μελετώντας τα Παιδιά ως Παίκτες Ψηφιακών Παιχνιδιών: Διαδραστικές Αφηγήσεις, Πλαίσια¹ και Διαλογικότητα»

Στις μέρες μας όλο και περισσότερα παιδιά γίνονται παίκτες ψηφιακών παιχνιδιών. Ωστόσο, γνωρίζουμε ελάχιστα σχετικά με τις εμπειρίες τους στο παιχνίδι, καθώς αυτές επηρεάζονται από ένα πλήθος διασυνδέσεων. Μέχρι στιγμής δεν έχουν εξεταστεί επαρκώς οι αλληλεπιδράσεις των παιδιών που λαμβάνουν χώρα κατά τη διάρκεια ή πέραν του ψηφιακού παιχνιδιού. Αντίστοιχα, λίγες έρευνες έχουν γίνει σχετικά με τις αφηγήσεις των παιδιών ως παίκτες των ψηφιακών παιχνιδιών.

Η παρούσα διατριβή πραγματεύεται το συσχετισμό του στοιχείου της αφήγησης και της διάδρασης και προτείνει τον όρο "παιδικές διαδραστικές αφηγήσεις" για να περιγράψει τις αφηγήσεις που προκύπτουν από τις αλληλεπιδράσεις που λαμβάνουν χώρα μεταξύ των νεαρών παικτών ψηφιακών παιχνιδιών. Αναρωτιόμαστε ποια είναι η συμβολή της αφήγησης στην κατανόηση των αλληλεπιδράσεων των παιδιών. Διερευνούμε επίσης τις αλληλεπιδράσεις των παιδιών σε σχέση με τα περιβάλλοντα² που τα επηρεάζουν.

Εφαρμοσμένη σε δύο διαφορετικούς χώρους, ένα σχολικό εργαστήριο και μια εξωσχολική δραστηριότητα στο σπίτι, η μελέτη παρατηρεί το ψηφιακό παιχνίδι των παιδιών και διερευνά τις "διαδραστικές αφηγήσεις των παιδιών" με τη βοήθεια δύο θεωριών ως μεθοδολογικά εργαλεία: Στην πρώτη φάση της έρευνας οι αλληλεπιδράσεις των παιδιών μελετώνται σύμφωνα με τη θεωρία των πλαισίων του Goffman, με βάση τις τελετουργίες

¹ Ο όρος "frames" μεταφράστηκε ως "πλαίσια", καθώς αναφέρεται στην έννοια των πλαισίων ως ερμηνευτικά σχήματα, σύμφωνα με τη θεωρία του Goffman (1974). Αντίστοιχες μεταφράσεις του όρου στην ελληνική βιβλιογραφία αναφέρονται από τις Μακρυνιώτη (1996), Θεοδωροπούλου (2014).

² Ο όρος "contexts" μεταφράστηκε ως "περιβάλλοντα", καθώς αναφέρεται στα περιβαλλοντικά συστήματα που επηρεάζουν την εξέλιξη της ζωής των παιδιών, στη βάση της οικοσυστημικής προσέγγισης του Bronfenbrenner (1977). Η επιλογή της λέξης "περιβάλλοντα" για τη μετάφραση του όρου "contexts" συνάδει με την ελληνική απόδοση της παραπάνω προσέγγισης από τις Χουντουμάδη & Πατεράκη (2008).

του παιχνιδιού, την εικόνα του "εαυτού" του παίκτη και τις σχέσεις με τους άλλους. Η δεύτερη φάση της έρευνας επικεντρώνεται στις αφηγήσεις νεαρών παικτών ψηφιακών παιχνιδιών, οι οποίες διερευνώνται σύμφωνα με τη διαλογική θεωρία του Bakhtin, με βάση τέσσερα διαλογικά στοιχεία: το πλεόνασμα θέασης, τον χρονότοπο, την πολυφωνία και την ετερογλωσσία.

Τα κύρια ευρήματα της έρευνας μας δείχνουν ότι για να οργανώσουν τις εμπειρίες τους στο παιχνίδι, τα παιδιά δημιουργούν πλαίσια που συνδέουν τον φανταστικό κόσμο του ψηφιακού παιχνιδιού και τον πραγματικό κόσμο. Αναδεικνύουμε επίσης το διαλογικό χαρακτήρα των αλληλεπιδράσεων μεταξύ των νεαρών παικτών, αντιστακώνοντας τα άμεσα προσωπικά και κοινωνικά περιβάλλοντα των παιδιών. Από αυτή την άποψη, οι "παιδικές διαδραστικές αφηγήσεις" χρησιμεύουν ως όχημα επικοινωνίας μεταξύ των νεαρών παικτών των ψηφιακών παιχνιδιών. Η σημασία αυτής της μελέτης έγκειται στο ότι συμβάλλει στην αποτελεσματικότερη προσέγγιση των αφηγήσεων που δημιουργούνται από τα παιδιά, με σημείο εκκίνησης τις εμπειρίες τους από το ψηφιακό παιχνίδι. Συμβάλλει επίσης στον προβληματισμό για την αναζήτηση πιθανών συνδέσεων μεταξύ των ψηφιακών παιχνιδιών και των κοινωνικών περιβαλλόντων των παιδιών.

ABSTRACT

Today more and more children become digital players, but we know little of their game experiences, as they are influenced by a multitude of interconnections. So far, children's interactions that take place during or beyond gameplay have not been adequately examined. Accordingly, little research has been done regarding children's game narratives.

The thesis argues that the elements of the narrative and interaction are interrelated and proposes the term "children's interactive narratives" to capture the phenomenon of children's co-creation of narratives through their interaction as digital game players. We ask what is the contribution of narrative in the understanding of young digital players' interactions. We also explore children's interactions within their contexts.

Realized in two different settings, a school workshop and an after-school home-based activity, the study observes children's digital game play and investigates "children's interactive narratives" with the aid of two theories as methodological perspectives: In phase one children's interactions are studied according to Goffman's framing theory, on the basis of game rituals, the image of the player's "self" and the relations to others. Phase two focuses on children's relations depicted in their narratives, which are investigated according to Bakhtin's theory of dialogism³, based on the elements of transgression, chronotope, polyphony and heteroglossia.

The main findings of our research suggest that to organize their gameplay experiences, children create frames that connect the fictional and the real world. We also demonstrate that interactions between players are of dialogic nature and reflect the children's immediate personal and social contexts. In this respect, "children's interactive narratives" serve as a communication vehicle among children as digital game players. The study informs our theoretical understanding of game narratives created by children and shows a correspondence between digital games and children's social contexts.

³ The term "dialogism" is also met in the form of "dialogicality". The choice of the word "dialogism" is based on the terminology used by Holquist in his book "Dialogism. Bakhtin and his World" (1990).

TABLE OF CONTENTS

LIST OF FIGURES	XI
LIST OF TABLES	XIII
DEDICATION.....	XIV
ACKNOWLEDGEMENTS	XV
CHAPTER 1 INTRODUCTION	1
1.1 A starting point.....	1
1.2 Children and digital games: issues raised	3
1.3 Connecting the concepts of interaction, narrative, frames and dialogism.....	5
1.4 The thesis organization.....	6
CHAPTER 2 CHILDREN’S DIGITAL PLAY: GAME INTERACTIONS AND GAME NARRATIVES.....	8
2.1 Digital games, play and children.....	9
2.2 Seeking digital game boundaries.....	18
2.3 Defining and analyzing game interactions	23
2.4 Player interactions	28
2.5 Defining narratives	34
2.6 New media and game narratives.	43
2.7 Children’s interactive narratives	49
2.8 Conclusionary points.....	53

CHAPTER 3 FRAMES AND DIALOGISM: THEORISING CHILDREN’S

NARRATIVES AS DIGITAL GAME PLAYERS.....	54
3.1 Goffman’s frame theory	55
3.2 Frames and digital games	61
3.3 Bakhtin’s dialogism theory	69
3.4 Dialogism in digital games.....	73
3.5 Conclusionary points	83

CHAPTER 4 METHODOLOGICAL CONSIDERATIONS FOR DATA

COLLECTION AND ANALYSIS	86
4.1 The research problem	86
4.2 The research approach.....	88
4.3 Children’s contexts and gameplay	99
4.4 The research participants: Playing games in the school workshop and in an after-school activity	104
4.5 Phase one: Interactions between the players and the game environment.....	112
4.6 Phase two: Focusing on children as digital game players’ narratives	116
4.7 Triangulation	119
4.8 Ethical issues and dilemmas.....	120
4.9 Conclusionary points.....	122

CHAPTER 5 ANALYZING CHILDREN AS DIGITAL GAME PLAYERS’

INTERACTIONS ACCORDING TO THE CONCEPT OF FRAMES	124
--	------------

5.1	Episodes of coping with game boundaries: placing “self” in the game frames	124
5.2	Episodes of playing with peers, friends and family: studying “relations to others” in game frames	145
5.3	Depicting digital game frames in children’s drawings: the game rituals	150
5.4	Conclusionary points	172

CHAPTER 6 ANALYZING CHILDREN’S GAMEPLAY INTERACTIVE

NARRATIVES ACCORDING TO THE THEORY OF DIALOGISM 174

6.1	Episodes of transgression and chronotopes: Children’s views on “self” and “other” in space and time	174
6.2	Episodes of polyphony and heteroglossia: Emergence of children’s multiple voices during gameplay.....	186
6.3	Conclusionary points	197

CHAPTER 7 CONCLUSIONS: REFLECTIONS, LIMITATIONS AND FUTURE

RESEARCH 198

7.1	Conclusions	199
7.1.1	Portraying children’s digital game experiences: “Children’s interactive narratives”	199
7.1.2	Organising gameplay experiences: Creating frames to connect the fictional and the real world	200
7.1.3	Interactions amongst children as digital players: Dialogic and social nature	

7.2	Reflections on theory and methodology.....	204
7.3	Difficulties and limitations.....	206
7.4	Recommendations for digital games' use as educative experiences.....	208
7.5	Recommendations and future research directions.....	209
7.6	Some final remarks.....	211
APPENDIX A GAMES CHILDREN PLAYED IN THE TWO PHASES OF THE RESEARCH		213
APPENDIX B SYMBOLS FOR DISCOURSE TRANSCRIPTION		217
APPENDIX C ACCESS TO SCHOOL LETTER.....		221
APPENDIX D SCHOOL WORKSHOP SEATING ARRANGEMENT PLANS ..		225
APPENDIX E CHILDREN'S GAME SUGGESTIONS		227
REFERENCES.....		228

LIST OF FIGURES

Figure 2-1: Space navigation in Pandalife game	29
Figure 2-2: Space navigation in Fortnite, Battle Royale	30
Figure 2-3: Ryan’s situated narrative diagram (Ryan, 2009, p. 311)	42
Figure 3-1: Contextual Game Experience Model. (Mayra, 2007, p. 813).	65
Figure 3-2: An example of dialogism in Fortnite	82
Figure 4-1: Research Design: Phases and Time Periods.	94
Figure 4-2: Children players’ possible contexts (based on Bronfenbrenner, 1977 and Mayra, 2007).	103
Figure 4-3: Children playing in the home-based activity	115
Figure 4-4: Playing Fortnite on PlayStation and on tablet.....	117
Figure 4-5: Freeplay on Fortnite in the home-based activity.....	118
Figure 5-1: Playing Wii in the home-based activity	134
Figure 5-2: Working with the Wii avatar creator. Creating family avatars.	134
Figure 5-3: Noah's and Vicky's game world.....	140
Figure 5-4: Minecraft drawing.....	153
Figure 5-5: Minecraft screenshot	154
Figure 5-6: Papa Louie 2 drawing	155
Figure 5-7: Papa Louie 2 screenshot.....	156
Figure 5-8: Raft Wars 2 drawing	157

Figure 5-9: Raft Wars 2 screenshot	157
Figure 5-10: Dr Daisy Pet Vet drawing	159
Figure 5-11: Dr Daisy Pet Vet screenshot	159
Figure 5-12: Clash of clans drawing.....	161
Figure 5-13: Clash of clans screenshot	161
Figure 5-14: Ice Age village drawing	163
Figure 5-15: Ice Age village screenshot	164
Figure 5-16: Dragon City drawing.....	165
Figure 5-17: Dragon City screenshot.....	166
Figure 5-18a, b: Pandalife drawings	168
Figure 5-19a, b: Pandalife screenshots	169
Figure 5-20: Subway surfers drawing.....	171
Figure 5-21: Subway surfers screenshot.....	171
Figure 6-1 a, b: Fortnite map sketches.....	185
Figure 6-2: A Fortnite party	192
Figure 6-3: Players' presence in two worlds simultaneously. Aris	196
Figure 6-4: Players' presence in two worlds simultaneously. Apostolos	196

LIST OF TABLES

Table 1: Games played in this research, based on Ryan (2006b, 2011).	27
--	----

DEDICATION

To Paris for his endless encouragement. Without his urging, this undertaking would never have started.

To Aristotelis and Agis. They were a source of inspiration, but also a reason for completing this endeavor.

ACKNOWLEDGEMENTS

First, I would like to thank my supervisor, Professor Anna Chronaki for her invaluable guidance and ardent support throughout this long but extremely significant journey in the study of children's involvement with digital games. I am grateful to the committee members, Emeritus Professor George Papakonstantinou and Professor Dimitris Charitos for their insightful comments in critical moments of my research. I would also like to thank Assistant Professor Katerina Makri, Professor Charalampos Karagiannidis, Assistant Professor Dimitris Gouscos and Professor Katerina Mihalopoulou for their constructive comments.

I would like to thank Mr Eleftherios Geitonas for the confidence he has shown in me, regarding the research implemented in the school workshop. Equally, I would like to thank the school teachers who welcomed me and generously offered their assistance in organising the school workshop, as well as children's parents who gave their consent.

Finally, I am thankful to all the children who participated in both phases of the research, at school and at home. Their enthusiasm and spontaneity made this research come true.

CHAPTER 1

Introduction

1.1 A starting point

My personal motive in this research has evolved around many years of experience in collaborative design of projects on digital games, but also as a parent of children who love to play games. Having observed the ways in which children engage with digital games, I was struck by the fact that through game play, children develop skills to manage the digital space. I was also impressed by the fact that even young children tend to persistently follow the game rules and learn how to play the game simply by playing it, with an increasing desire for engagement. I was particularly interested in how children players experience the digital games, and especially how they “see” themselves and their co-players during game play, being consisting parts of the digital space. I wondered what processes take place during digital gaming, how these affect children's interactions and relationships with others, and what their contribution in children’s development is.

Fodder for my reflections were the words of Valerie Walkerdine, in the Introduction of her book *Children, Gender, Video Games* (2007):

“new technologies and international communication flows collapse some central notions of what it means to be a child in terms of traditional accounts of development” (Walkerdine, 2007, p.1).

Walkerdine observed that children’s engagement with new technologies caused the overturning of traditional developmental theories. For example, Jean Piaget (2000)

accounts of childhood, as a period of acquiring knowledge for the adaptation of the individual to the environment of the adults', contrasts with sociocultural theories (Vygotsky, 1978) which advocate that children become participants in social life, interact with their environment, and learn to use language as a tool to mediate thinking and action. These changes are eloquently reflected in the fundamental activity of children, which is play. Specifically, Walkerdine mentioned, "*playing is made up of complex interrelations, relations often obscured by our habitual way of reading action as a person playing a game*" (Walkerdine, 2007, p.2).

Evidently, there is complexity in game play. Walkerdine observed how players correlate, a subject that needs to be further explored. In this context, to analyze this new reality, the appropriate tools are being sought. Mary Laure Ryan (2003) suggested narrative as an element of transmedial value in the study of digital media, implicating multiple delivery channels. Further, Juul (2002) and Calleja (2011) argued for the co-existence of narrative and the interactive element in digital games. This co-existence, according to Neitzel (2014), can provide the link between the player and the game, allowing the representation, or even the depiction of the player in the game-world. Thus, narrative extends beyond the text's linguistic features and embraces the player's thoughts, acts and reactions.

1.2 Children and digital games: issues raised

In recent years, digital games are growing at an extremely rapid rate, marking a considerable increase in popularity to children (Hooft Graafland, 2018; Statista, 2021). Scientific research has focused on aspects of digital games covering many different disciplines, like technological innovations and game development issues, literary and cultural aspects, new media possibilities and advancements (Rutter & Bryce, 2006) as well as learning and literacy (Gee, 2003). Games are considered a useful learning tool, either by design, in the case of serious games, or in cases of using entertainment games in a variety of school subjects (Τιμπλαλέξη, 2014). Regarding children game players, emphasis has been laid on players' antisocial behavior, exposure to harmful content and gender issues (Walkerline, 2007; Χρήστου, 2005; Κατσιώνης, 2007; Karle, 2011). However, according to Youn Jun Huh (2017), only a limited number of studies consider the socio-cultural factors that affect children's gameplay. Furthermore, Bacalja (2023) argued that digital game literacies are socially and culturally situated and could be used in formal learning. Representative examples of scientific research in the social part of digital games and children, are those of Mizuko Ito and Constance Steinkuehler. Conducting an ethnographic work on youth new media practice, Ito (2010) acknowledged the existence of social, cultural and economic contexts that relate to young people using new media, and investigated how games can support informal learning in these contexts. Studying the information exchange of children playing online games, Steinkuehler (2004) identified the importance of children's social contexts. Indeed, by design, digital games make possible

the rendering of multiple associations between the player and his/her environment. Therefore, there is potential for studying children's interactions as affected by children's social contexts.

Significant in the study of children as digital game players' interactions is the element of narrative. A keen supporter of the relation between narrative and digital games, Mary Laure Ryan (2014) acknowledged major changes brought to narrative creation through digital media. Combined with Jerome Bruner's idea that narration characterizes human development and operates as an "instrument of mind in the construction of reality" (1991), the study of children as players' narratives claims a wealth of information on their "reality" through the lens of digital games. Therefore, interaction and narrative form two basic components of children's digital gameplay that should be studied in depth.

The first research question of the thesis relates to the contribution of narrative in the understanding of children's interactions as digital game players. In this direction, further questions arise that need to be answered: What form does the narrative element take in the case of children as digital game players? How are these narratives connected to children's gameplay? How do these narratives reflect children's interactions? The chain of these questions leads to the second research question, which deals with the exploration of children's interactions within their contexts. Specifically, as mentioned earlier, digital gameplay is determined by a negotiable boundary (Juul, 2008). Thus, during gameplay the player has to cope with his/her existence in two worlds, the real and the fictional. To which

contexts do these two worlds refer to? Are these contexts depicted in children's gameplay interactions? Can this depiction be observed? How?

1.3 Connecting the concepts of interaction, narrative, frames and dialogism

An essential element of play, interaction, is equally important in digital gameplay, being indicative of the system's reactions to the player's moves (Salen & Zimmerman, 2003). Moreover, interaction in digital games takes different forms that concern the player's coping with the digital game environment and reflects on the player's game experiences. Thus, playing single-player digital games suggests different forms of interaction than playing online multiplayer games. Another aspect of interactivity also regards the evolution of the game narrative (also known as the game story), in relation to the player involvement (Ryan, 2011). Equally, interactivity has an impact on the creation of another type of narrative, namely the recounting of the player's game experiences.

With focus to children as game players, in this thesis I consider the relation between gameplay interactions and players' narratives of their gameplay experiences, a subject that has been little researched. For the discussion of these concepts it is important to introduce a new term that would encompass the variety of interactions among children as digital players (face to face, online interactions), and the plethora of ways that children's gameplay experiences are communicated as narratives (verbal, non-verbal, written narratives).

Therefore, I seek the appropriate theories that suggest methodological tools for the study of "children's interactive narratives", namely Goffman's frame theory and Bakhtin's dialogism theory. The reasons for the selection of the above theories regard the conceptual

correlations between frame theory and play, on the one hand, and dialogism theory and narrative, on the other. Specifically, Goffman studied player's interactions and considered games as structured "encounters" (1961). In relation to digital games, frames can be used to analyse children's interactions as players because they assist us to study complex digital play situations that cannot be placed either inside or outside the magic circle (Juul, 2008) or gameplay situations where frames contain other frames. Bakhtin's dialogic theory can be used to analyse children's narratives focusing on the exchange of utterances. Dialogic theory is also useful for the study of the player and his/her presence in the digital game world. Besides, the two theories allow for the study of the player both as "self" as well as part of a social group. In addition, both theories focus on the use of language and the narrative element as a vehicle for interaction. Finally, these theories have already been used as complementary by Roth Gordon (2021) and Cresswell & Hawn (2012), in other areas than the study of children or player narratives.

1.4 The thesis organization

In this introductory chapter, issues related to the exploration of children's gameplay interactions based on their narratives were discussed. The research questions on children's digital gameplay that were developed in this thesis are: What is the contribution of narrative in the understanding of children as players' interactions? How can these interactions be explored within children's contexts?

In order to pursue further these questions, the thesis chapters are organized as follows: Chapter Two describes the key elements in children's interactions with digital games, and provides the theoretical framework for the relation between narrative and interactivity in digital games. Chapter two also introduces the term "children's interactive narratives" to capture the interrelation of the narrative and the interactive element in the depiction of children's gameplay experiences. Chapter Three describes the development of new tools to study the interactivity-narrative relation, on the basis of Erving Goffman's frame theory and Mikhail Bakhtin's dialogism theory as methodological perspectives, and develops their applications in the study of children's digital gameplay interactions according to rituals, the image of "self" and relations to others for frame theory, and heteroglossia, polyphony, chronotope and transgression for dialogism theory. The choice for the methodological approach of the research study is presented in Chapter Four, describing the data collection methods applied in two different settings, a school workshop and an after-school home-based activity, in an ethnographic qualitative research. This chapter also deals with ethical issues and dilemmas that have been anticipated. Chapters Five and Six provide the data presentation, with regard to the two research questions set. Specifically, Chapter Five deals with the analysis of children as digital players' interactions according to frames, and Chapter Six analyzes dialogism in children's gameplay interactive narratives, on the basis of Bakhtin dialogism theory. Finally, Chapter Seven discusses the conclusions, reflections on theory and methodology, difficulties and limitations, as well as recommendations for digital games as educative experiences and future research directions.

CHAPTER 2

Children's Digital Play: Game Interactions and Game Narratives

Digital games have particular characteristics, but also clear links to traditional games, child development research and literary principles. Two elements of particular interest in my research on digital games are game interactions and game narratives. The interaction element was studied in relation to the player's influence on the digital game environment (Salen and Zimmerman, 2003; Murray, 1997; Calleja, 2011; Wolf, 2010), the evolution of the game's narrative (Ryan, 2001, 2011), or the relationships between players (Steinkuehler, 2004; Walkerdine, 2007). The narrative element, while initially seen as incompatible with digital game design (Eskelinen, 2001), is now recognized as a useful game element (Juul, 2001; Schell, 2008). Even further, the narrative element runs through the digital game not only in the form of the game “story”, but also in other forms related to player interactions (Ryan, 2022). Below, the concepts of interaction and narrative are discussed, and the relations between them are examined. In an attempt to study in depth the simultaneous “presence” of the children as digital game players in two worlds, the real world and the digital game world, through their own narratives, a new term is introduced, “children's interactive narratives”.

2.1 Digital games, play and children

A fundamental human activity, play (παίγνιον) has been closely related to child (παις) in Ancient Greek language, marking an instinctive expression of an inner need of man's early years. Specifically, in Ancient Greek the two words for play (παίγνιον, ἄθλημα) were used to express playing with a toy, playing a free-form play and equally playing a structured game. Contrary to many languages, Ancient and Modern Greek included, in the English Language the two words "play" and "game" are used to express two separate ideas. However, according to Salen and Zimmerman (2003) there is a double framing of the play - game relationship. Effectively, on one hand, games are viewed as a subset of the generic category of playful activities under the name of play. On the other hand, games are seen as "complex phenomena" that may contain play. Therefore, as Salen and Zimmerman put it, play can be "a larger and a smaller term than game" (2003, p 71).

Play has been extensively discussed by prominent scholars. In his groundbreaking book *Homo Ludens: A study of the play element in culture* Johan Huizinga (1955) viewed play as an organized, goal directed form of activity. Building critically on Huizinga's theory, Roger Caillois (1961) stressed the apparent difficulty in defining play. Caillois distinguished four play forms and two types of play: agon or games of competition, alea or games of chance, mimicry or role-playing games andilinx or vertigo games. These play forms were placed on a ludus - paidia continuum, in an effort to classify games according to the presence of structured activities with explicit rules in them. Effectively, the

discussion about play sets a question: Are we talking about a free formed play or a goal and objective focused type of play?

On the basis of literature on games, a common definition of game is far from being reached. However, going over the multiple game definitions, in order to understand what a game is, we notice that they share some similarities. First, in most game definitions there is a descriptive pattern: Game is defined as “an activity” (Huizinga, 1955; Caillois, 1961), “an exercise of voluntary control systems” (Avedon & Sutton Smith, 1981), “a form of recreation” (Kelley, 1988) or “a system” (Salen & Zimmerman, 2003; Crawford, 2003) that needs to be regulated with rules (Huizinga, 1950; Caillois, 1961; Suits, 1978; Avedon & Sutton Smith, 1981; Salen & Zimmerman, 2003). Secondly, other features that appear in game definitions relate to placing the game in space, time and studying the player's role in it (Huizinga, 1955; Caillois, 1961). Thus, a player's role is usually related to abiding by the game rules. Thirdly, the game outcome, although it is not always quantifiable, is also mentioned in game definitions (Salen & Zimmerman, 2003; Avedon & Sutton-Smith, 1981).

However, a worth-mentioning holistic view on game definitions was given by Jesper Juul. Juul (2003a, 2003b, 2012) worked on the deconstruction of a multitude of game definitions. Starting out with a comparative view, he arrived at suggesting six main game features that characterize all games. According to the presence of these features in games, he made a schematic depiction of “game” and “not game” cases. More specifically, with the argument that most definitions partially satisfy the need for a general understanding of

the properties of games, Juul studied comparatively game and digital game definitions, as well as their application to different game cases. Juul confronted the broader genre of games, aiming to demonstrate that games are transmedial and that computers only constitute a game medium, like a cardboard, cards and dice form in the case of paper board games. Thus, in his classic game model Juul coined the set of six main features that form a game: fixed rules, a variable outcome, valorization of outcome, player effort, player attachment to outcome and negotiable consequences. Juul combined the above features to the three main dimensions of games (the game as system, composed by rules and results, the player's role, composed by player's goals and behavior, and the dimension that comprises what lays outside of the game context), in order to reach the characterization of games, borderline cases and not games.

Similar to Juul, in their definition, Salen & Zimmerman (2003) did not differentiate digital games from other non-digital games. They argued that “the physical medium of the computer” does not represent the entire game. However, apart from the basic game features like rules, artificial conflict and quantifiable outcome, the authors defined digital games according to four important traits or capabilities of digital game design: Immediate but narrow interactivity, information manipulation, automated complex systems and networked communication. Specifically, immediate interactivity lies in the fact that while playing a digital game, the player gets immediate results on his screen. However, this relation of interactivity remains restricted because in most cases the game as a system responds to the player's actions in a predetermined way. Regarding information

manipulation, the player has the potential to process the game elements. An example of information manipulation may be the use of the map in the *Fortnite* game, in order to choose where to land or check how close the storm is. Consisting automated complex systems, digital games offer great automated possibilities related to simulations or scoring. Finally, networked communication offers players the potential to meet online with other players in digital play spaces, share online experiences and cooperate in the context of an online game.

Accordingly, being a part of computerized media, digital games form a considerable vehicle of procedural rhetoric. Specifically, in his book *Persuasive Games: The Expressive power of Videogames* Ian Bogost claimed that “the ability to execute computationally a series of rules fundamentally separates computers from other media” (2007, p. 122). Based on Janet Murrays remark in her book *Hamlet on the Holodeck* which defined procedural as “a defining ability to exercise a series of rules” (1997, p. 232) Bogost supported that digital games can use processes persuasively because “they embody processes and rely upon players to enact them” (2007, p. 45). Indeed, playing digital games entails procedural rhetoric of educational value: Even at the beginning of the gameplay the player is learning what to do and how to do it. Through the game processes he is persuaded to learn and follow the rules so that he can win the game. Additionally, procedural rhetoric may apply in digital games in different forms: According to Bogost games usually involve ideological content and are used as a tool of persuasion. This affects players’ behavior and becomes apparent in advertisements that may occur during gameplay. In this case the player

becomes aware of the game agenda which encompasses persuading him to watch the advertisement in order to carry on with the game. Similarly, games have political content that affects players' involvement. This is the case of players' allying with other online players, inventing tactics to capture the enemy or giving life to other players in Fortnite game.

An interesting view on digital games structure was suggested by Jesse Schell (2008). According to Schell games are made of four basic elements that although not equally visible, are essential in a game. The elemental tetrad is composed of Mechanics, Story, Aesthetics and Technology. All four elements are related in a diamond shape scheme. Mechanics stands for the rules and the procedures of the game, whereas Story is formed by the sequence of events, either linear, branching or emergent. Aesthetics refers to the player's sensing while experiencing the game and is related to how the game looks or sounds. Finally, Technology refers to any materials that are used to construct a game. Contrary to Aesthetics, Technology tends to be the least visible element in a game. Similarly, the MDA Framework (Hunicke et al, 2004) forms another suggestion in the analysis of digital games, on the basis of the three components presented above, mechanics, dynamics and esthetics. The MDA Framework stresses on the difference of perspectives between designers and players in relation to digital games and game experience.

Regarding terminology, it should be noted that among the terms “video games”, “computer games” and “digital games” in this thesis I will use the term “digital games”. According to Papagiannakis (2019, p.5) *“A digital game refers to a multitude of types and*

genres of games, played on different platforms using digital technologies such as computers, consoles, handheld, and mobile devices”, thus it entails technological diversity, in contrast to the terms of video games and computer games that refer to particular devices for gameplay.

Play in children's lives has been theorized from diverse perspectives. Extending from the field of psychology to education and sociology, the multiple theories of play indicate the attraction of play to the research community. Although there is still much work to be done regarding a “fruitful exchange” among different disciplines on children’s play (Nicolopoulou, 1993), most theories of play focus on the substantial question of why children play.

As already mentioned in 1.1, within theories in psychological research, two theoretical frameworks prevail: Piaget approach to play, which is included in his larger theory of cognitive development, and Vygotsky’s sociocultural theory of mental development. According to Nicolopoulou (1993) and Marianovic-Shane (2011) the above theories focus on the relationship between play and cognitive development. However, Piagetian theory does not take account of the sociocultural dimension of play. In her critical overview of play research, Nicolopoulou (1993) claimed that Vygotsky’s theoretical framework may complement the Piaget approach, along with some elements of the Freudian theory stressing on child emotion in play. Effectively, according to Piaget theory of play (developmental stage theory), play originates in the child’s mental structure and can be shaped in two key processes, as a way to come to terms with the real world:

assimilation and accommodation. According to Piaget, in most human activities that require mental capacities accommodation precedes, by creating internal organized patterns. Assimilation follows, by incorporating situations into the above patterns. However, in play there is a “primacy of assimilation over accommodation” (Piaget, 1962, as cited in Nicolopoulou, 1993, p.3). Piaget also distinguished an evolution in play in human’s first seven years of life. Practice play, symbolic play and play with rules follow crucial phases of child development, from purely individual play to social play. Effectively, practice play is of a repetitive nature, aiming at the mastery of motor activities. One step further in a child’s cognitive development, symbolic play involves the use of objects acting as symbols. Finally, play is run by rules and becomes collective.

With focus to the vital role of the child’s social context, Vygotsky (1978) emphasized the need for a child to acquire a series of “conceptual resources of the preexisting cultural world” (Nicolopoulou, 1993). To this, a child is assisted by other knowledgeable adults or peers, using language and a variety of cultural artifacts. The child advancement from one developmental level to another was defined as “Zone of proximal development”, meaning the exelixis from the child's actual developmental level to a potential one. ZPD is characterized by problem solving situations under adult guidance or in collaboration with more capable peers. Vygotsky views stressed on the social character of play. For Vygotsky (1978) play enhances the development of higher mental functions. These functions are based on relations between individuals and are twofold: Inter-subjective functions, which occur in a social level, and intra-subjective functions, which occur in an individual level.

Effectively, for Vygotsky, the child's social experiences, through play, shape the way he/she thinks. Thus, it seems to exist a strong bond between player experiences and speech, as a way for young children to interpret their experiences. Regarding game stages, Vygotsky did not see the three stages of play as Piaget did. On the contrary, he saw play as a social activity. The social character of play exists even in the cases of a single child play, meaning that in all cases play entails sociocultural elements.

Nicolopoulou (1993) also refers to how Freud's psychoanalytic theory saw in play the expression of the child's emotional tautness, touching a side that has not been effectively considered in the Piagetian approach to play. Freud (1908) argued that play has a cathartic role and represents an attempt to resolve conflicts and to beat one's fears. This results in releasing the player's emotions with possible healing effects. Although most of the above theories have been developed taking into consideration children of early age who had no access to any form of digital games, elements of the above theoretical approaches are observed in the current digital game design as well as during gameplay. Effectively, in children's interactions with digital games, there is emphasis on player experiences. Specifically, as mentioned earlier, different theories focus on different aspects of the role of play in child development. Providing either a way for a child to experience the world (Vygotsky, 1978; Piaget, 1962; Bruner, 1986) or a recourse to express one's tensions and fears (Freud, 1908), digital gameplay gives prominence to the player's own experience. The creation of compelling player experiences has been a major objective of digital games that can be put to good use if we consider cognitive and emotional aspects of digital games.

Based on Vygotsky's idea about speech as a way for young learners to interpret their experiences (1978), it becomes clear that digital game players interpret their game experiences using speech. As a result, players' narratives of their gameplay provide rich information regarding the player's view on himself/herself and his/her environment.

Additionally, in digital games the application of the theory of proximal development to practice can be observed. Although it is not considered an entirely play theory, Vygotsky's zone of proximal development (1978) discusses the psychological development of children involving a wide range of cognitive and emotional processes, interpreted as what the learner can do with guidance, unaided, and finally, what the learner can't do. In the case of digital games, zone of proximal development applies to the player's ability to handle problem solving situations during gameplay. Thus, a new player is introduced to the game rules through less "formal" instructions and more "hands-on" gradually assigned tasks (Gee, 2003). In addition, a common pattern in digital games is difficulty selection. In all difficulty game modes challenges are designed to fit the player's abilities. Moreover, in the game context the player gets assistance either from the game itself through the game interface, or gets involved in a dialogue with his/her co-players that helps him/her achieve his/her goals during gameplay.

Finally, many digital games maintain a social character. Specifically, in some digital games the theory of proximal development applies in the form of the player's online social interaction with skillful peers. This is the case of *Minecraft* where players get to contact online in various ways, in an effort to gain access to useful information and advance

in their gameplay. From sending messages or chatting with other players and co-constructing on a *Minecraft* server to formal or informal player communities (Minecraft forums, r/Minecraft, Planet Minecraft, CraftHub, The Shaft, Minecraftopia, World of Minecraft, The Minecraft Museum to name a few), *Minecraft* players learn through social interactions by exchanging user-generated knowledge (Konert et al, 2012). Another example of applying Vygotsky's socio-cultural approach to digital games and socially situated cognition (Lave, 1988) relates to the "Fifth Dimension", an after-school program making extensive use of computer games in order to integrate the play element into larger systems of educational practice (Nicolopoulou, 1993). Finally, Veresov & Veraksa (2023) discussed digital play in early childhood within the Vygotskian approach framework. Based on the investigation of three components of play, children's experiencing imaginary situations, play rules and play actions, they suggested a distinction between digital play and digital game as a cultural tool.

To sum, digital games deploy significant theories of play, concerning players' interactions with the game environment and with other co-players. In this context, children as digital game players interpret their gameplay experiences in their narratives, using verbal, nonverbal and written communication.

2.2 Seeking digital game boundaries

In an effort to outline play as a cultural phenomenon Johan Huizinga (1955) considered play behavior as a motive that differs from man's everyday pattern. Huizinga advocated play's resemblance to a ritual, on the basis of both having "a consecrated spot",

a sort of a magic circle. Focusing on play, he detected a series of characteristics like the play's non-imposed nature, the ability to act as a "stepping out of real life", along with secludedness, marking the presence of limits of time and place. Tension and rules were also considered among the cornerstones of play.

Huizinga (1955) acknowledged the existence of differences in players' disposition while playing, affecting their game participation. He also mentioned the formation of play communities that do not necessarily cease to exist after the play has ended. Obviously, in *Homo Ludens* Huizinga highlighted the prominence of the game rules. He added that the transgression of the game rules leads to the collapse of the magic circle. For Huizinga, a characteristic case of rule transgression is the case of the "spoil sport", a type of player who ignores the rules, therefore is considered a threat for the advancement of the game and should be dispelled. According to Huizinga the "spoil sport" player type is mostly seen in boys' games. Apparently, this player type incarnates certain influences that threaten the wellbeing of the magic circle and trigger the magic circle survival mechanisms. In this case, even though a potential influence is identified ("spoil sport") and placed in the game sphere (boys' games), it is seen in a monolithic way: it breaks the rules, therefore it is harmful and should leave. Huizinga also viewed the figure of the "spoilsport" in relation to the "little community", his immediate surroundings. He even considered the possibility of the "spoilsport" to create a new game, with his own rules.

Evidently, Huizinga's view on game stressed on the formation of a limited area, outside of players' real life, without investigating to what extent some influences may

disrupt its' secludedness. Effectively, the role of the boundaries of the magic circle received much criticism (Brown, 2015). Indeed, in *Homo Ludens* there is no clear reference to the possibility of inside influences affecting the environment outside of the magic circle. Equally, there is no reference to influences from the outside penetrating the protected game space. Is there a possibility for the magic circle line to allow some communication between the two worlds, without leading to the destruction of the magic circle?

According to Huizinga (1955) the concept of the magic circle as a protected space with rule-based boundaries does not refer only to physical spaces of playing. Consequently, digital gameplay was also viewed as entering into a magic circle (Salen and Zimmerman 2003, Juul 2005). Hence, by clicking on a button, the player accepts to enter a magic circle of close digital bonds and attributes that appertain to the usage and trends of digital media. Indeed, applying the concept of the magic circle into game studies has been a controversial issue on the grounds of setting boundaries between the “real” world and the game.

In the field of game studies, the metaphor of the magic circle has received a lot of criticism. Calleja (2012) imputed to Huizinga a dichotomy between what is in the game and what lies outside the game. Calleja argued that in Huizinga's theory, play and reality are far from being considered as interwoven, marking binary dichotomies in the magic circle metaphor. In his turn, Juul (2008) rejoined that the game magic circle is in fact a “negotiable boundary”, acknowledging that players are capable of negotiating the game's impact in their reality.

In the game studies textbook *Rules of Play* Salen and Zimmerman (2003) argued that the magic circle serves as a boundary as well as a context created during game play:

“Beginning a game means entering into the magic circle. Players cross over this boundary to adopt the artificial behaviors and rituals of a game. During the game, the magic circle persists until the game concludes. Then the magic circle dissolves and players return to the ordinary world” (Salen and Zimmerman, 2003, p.333).

Salen and Zimmerman’s argument was embraced by Juul (2008) who claimed that the magic circle is a valid metaphor to depict the area in which the game rules and the game-related “social conventions” take place. Regarding criticism on the existence of boundaries between the game and the “real” world, Juul countered that there has been a misinterpretation of the concept of the magic circle:

“(The magic circle) is clearly not a perfect separation of a game from the rest of the world, but an imperfect separation that players negotiate and uphold. It is meaningless to make an ahead-of-time call about whether games are either supremely dissociated from or integrated with the context in which they are played. That question is in itself subject to continued negotiation between players” (Juul, 2008, p.61-62).

Juul goes even further by rephrasing the magic circle question. Instead of wondering whether a game is separate or not from the real world, he focuses on “how a game fits into a context” (Juul, 2008, pp.63).

To depict the variations of gaming, new terminology has been invented. Juul alluded to Garfield (2000) and his concept of *metagames*, in an effort to clarify “how a game interfaces with life”, how it affects the game players (Garfield, 2000, pp.1). Garfield studied the game circle in relation to players’ crossing its’ lines. He saw in a metagame four broad categories: What a player brings to a game, what a player takes away from a game, what happens between games, and what happens during a game. Even though for Garfield there is no game without a metagame, its connection to game design is rather vague.

From another standpoint, Castronova (2005) argued for a digression on virtual reality and digital games on the grounds of shifting emphasis towards communities instead of individuals, software instead of hardware and commercial market orientation instead of research driven digital game development. As a result, Castronova (2005) suggested the term, *synthetic world*, defined as “an expansive, world-like, large group environment made by humans, and which is maintained, recorded, and rendered by a computer” (Castronova, 2005, pp.11). Castronova (2005) supported that a major characteristic of a synthetic world is that it’s pervious, allowing the users to cross its’ boundaries and import or export attitudes to the outside world. Evidently, he acknowledged the existence of a distinct digital game world of its own rules, similar to Huizinga’s magic circle. However, in Castronova’s (2005) terminology boundaries tend to fade.

Viewing the game world as a spatial construct, Jorgensen (2013) stressed that it describes "different aspects of the game environment". It is based on a rule system and

forms an ecological environment where the player interacts. Thus, the game world can host a wide variety of situations and players' actions, according to the particular game design: questing, constructing, learning or even killing and damage can be equally dealt in a game space, provided that different game spaces are based on the same game design principles. According to Jorgensen (2013) game worlds are not limited to navigable space. They may also include certain game mechanics elements like selecting menus that shape the functional character of the game world. Finally, although distinct from story worlds, game worlds may also involve fiction. However, the narrative element in game worlds does not exist per se, nor does it take a dominant role in a digital game. On the contrary it follows a firm game mechanics design (Juul, 2001; Ryan, 2003). Effectively, the game world represents the overall scheme of the digital game. A thorough study of the game world provides useful information on the structure and the use of the game itself.

To conclude, playing entails following a ritual, a set of rules and participating in an environment that hosts the players' interactions. While interacting with the digital game environment, players negotiate the game boundaries, namely the game's impact in their reality.

2.3 Defining and analyzing game interactions

Interaction has been an important element in child development research. Despite their differences regarding the nature of interaction, for Piaget (1962) and Bruner (1990) interaction formed the child's basic means of constructing reality. Thus, while Bruner

emphasized interactions between people within a social framework, Piaget mainly studied the child's interaction with concrete or abstract elements of the external world. At the same time, of great interest is Vygotsky's (1978) view, which placed interaction with parents and peers in a prominent position for the achievement of child cognitive development.

The act of playing “implies interactivity” (Salen and Zimmerman, 2003, p. 56). More specifically, Salen and Zimmerman explain their statement by saying that “to play with a game, a toy, a person, an idea, is to interact with it”. Based on the interaction between the player and the game environment (Ryan, 2011), interactivity has seen many variations with the evolution of digital games. From pushing buttons or using joysticks, to talking to other players online or to non-player characters and making digital constructions, interactivity offers a wide range of choices and shapes the player experience. Studying interactivity in young children game play, Flynn, Richert & Wartella (2019) suggested four levels of engagement. Thus, receptive interactivity encompasses the reception of information and is associated with the player cognitive engagement, manipulative interactivity is related to physical engagement like touching buttons to manipulate on-screen objects, embodied interactivity uses the player body to move through the game space in the case of Virtual Reality games, and contingent interactivity involves exchanging messages and receiving feedback on previous player actions. Flynn, Richert & Wartella (2019) also saw connections of the above levels of interactivity with the different types of children play, like free play, guided play and co-opted play.

From another standpoint, interactivity is closely connected to the unfolding of the game narrative (Χρονάκη & Γαβριηλίδου, 2016). In this respect, digital games constitute digital texts, therefore they are largely connected to narrative (Ryan, 2001, 2011; Montford, 2007; Manovich, 2001; Salen and Zimmerman, 2003). Either a “fait accompli” or an “elusive unicorn”, the question of combining narrative and interactivity in digital media has been treated by many scholars (Laurel, 2001; Crawford, 2003; Glassner, 2004; Ryan, 2011), raising the debatable concept of “interactive narrative” (Ryan 2011). Mary Laure Ryan argued that the presence of both elements in digital texts is feasible. Towards a critical understanding of how the narrative and the interactive elements are interconnected, Ryan (2006b, 2011) provided a typology regarding how player decisions determine the evolution of the digital story world. Specifically, she claimed that the interactivity element in digital texts can be modeled according to layering. Devising the “interactive onion” metaphor, Ryan (2011) distinguished four main levels of interactivity. According to Ryan, on the outer layers, interactivity has little effect on the digital text story and concerns mainly its’ presentation. Getting to the core of the interactive onion, in higher levels, interactivity layers affect the story setup. The formulation of layers of interactivity also depends on players’ modes of participation, which range from external-exploratory, in the outer layers, to internal-ontological, in the core. According to Ryan (2006b, 2011), levels of interactivity range from level 1 or stories that involve peripheral interactivity, where players’ interactions with the game interface do not affect the story or the order in which the story events are presented. In level 2 interactivity enforces the player to change the order of the

story events, without altering the predetermined character of the game story. In level 3 the player is a part of the game world but the storyline remains fixed and cannot be altered. Level 4 approaches the ideal form of interactive narrative, meaning that the player participates in the story formation on the fly. In level 4 the game story emerges as the combination of the player input and the system response.

In Table 1, the games children played during the present research project are examined according to Ryan's levels of interactivity and players' modes of participation. Specifically, Table 1 shows that all the games played in the present research project are placed in levels 3 and 4 according to Ryan's typology. For all the games figuring in Table 1, the player exists in the game world as an avatar and his/her participation is internal. Effectively, player's participation represents a physical engagement in the game world through the avatar's actions: shooting, running, jumping, picking up things or questing. In games like *Ice Age Village* and *Friv Games* player's participation may be either internal or external. Specifically, in *Ice Age Village* the player has mainly an external role which focuses on building animal habitats and breeding animals. However, in certain minigames that exist in the game world the player assumes the role of Ice Age heroes. An example of internal participation is the *Scrat* fight game, where the player as *Scrat* swipes at jumping piranhas. In *Friv mini games* the player is free to choose among a wide variety of distinct minigames, figuring on Friv website. Depending on their design, some minigames require internal (*Fireboy and Watergirl*, *Raftwars*) and others require external participation (*Bubbleshooter*). Games in level 4 are characterized by stronger interactivity potential. I

n table 1 *Minecraft*, *Clash Royale* and *Clash of Clans* consist of games that, although they don't appear in the core of the "interactive onion", they support real time story generation. Being a sandbox game *Minecraft* (*Creative mode*) serves as a blank canvas where the player can build a whole world and even create a story within. Although not characterized by any narrative plot, the game provides the user with elements that could be of narrative use. Similarly to *Clash Royale* and *Clash of Clans*, story creation lies in the combination of data from the system and the user. As a result, every gameplay session sparks off a different story.

	Minecraft (Creative mode)	Fortnite (Battle Royale)	Clash of Clans/Cla sh Royale	Pandalife	Subway Surfers	Ice Age Village	Friv Games
Level	4 Real time story generation			3 Interactivity creating variations in a partly predefined story			
	Story generated on the fly			Fixed storyline, limited player freedom			
Player Participation	Internal ontological participation		External ontological participation	Internal ontological participation		Internal/External ontological participation	

Table 1: Games played in this research, based on Ryan (2006b, 2011).

2.4 Player interactions

Digital game design suggests different types of player interaction. For instance, a single player offline game like *Subway Surfers* suggests different interaction possibilities than a multiplayer online game like *Fortnite*. Whereas during gameplay in *Subway Surfers* the player interacts only with the game world elements, in *Fortnite* player interaction involves other players as well. These interactions offer multiple possibilities to the player like communicating, exchanging views and co-operating.

Regarding interaction between the player and the game environment, Wolf (2010) advocated that game space is an indication of interactivity. Specifically, digital game spaces host a wide variety of players' choices, like movement-related and decision-making options. Wolf suggests navigation as an example of the player interaction with the game space. Effectively, space navigation comprises a series of player moves and cognitive processes:

“Navigation is more than merely getting from one place to another; it is a cyclical process which involves exploration, the forming of a cognitive map of how spaces are connected, which in turn aids the decision-making processes employed by the player to move through those spaces for further exploration” (Wolf, 2010, p.19)

In many cases game worlds are represented on screen as digital maps. An example of a game using a digital map is *Pandalife* (Figure 2.1). Addressed to young players, *Pandalife* map is simple, depicting five main places in the countryside. These places stand

for a public square, a temple, a farm and shops. Navigation in *Pandalife* involves some degree of freedom between the connected places. During gameplay the player has the option to refer to the map in order to easily reach a certain place of the game world and access the mini game that is hidden there.



Figure 2-1: Space navigation in Pandalife game

Marking players' disposition and readiness to act (Calleja, 2011), working with the game world map, also constitutes of a form of ergodicity. In *Fortnite Battle Royale* (Figure 2.2) the map of the Battle Royale island is used for consulting at critical moments of the game. This is the case of incoming storms that cause the shrinking down of the island safe area, which is depicted on the game map. In order to stay in the game, players have to

frequently consult the map, to make the right choices and move to safe areas of the game world.

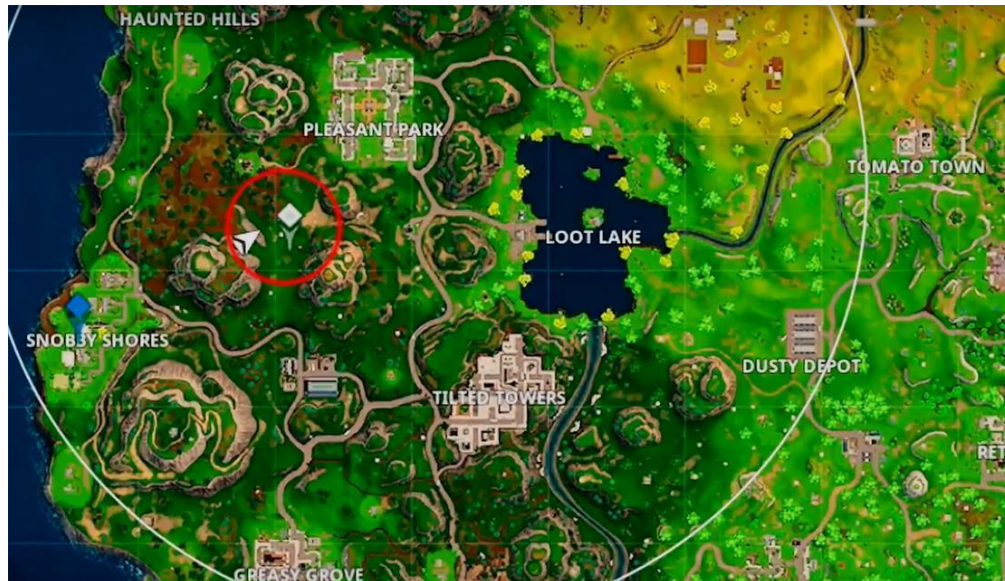


Figure 2-2: Space navigation in Fortnite, Battle Royale

In some games, space navigation occurs without the use of a map. This used to be the case of *Minecraft*, where the player moved in the game world without the help of a map. The player had to move as he/she pleased, but he/she had to find his/her way back to his/her home or shelter only by himself/herself. Up till recent changes in *Minecraft* and the creation of the Map item, memorizing the game world or tracing paths had been two common player strategies for not getting lost in *Minecraft* vast game world.

Overall, the game's interaction possibilities contribute to the player's immersion. Immersion has been defined as a “metaphorical term derived from the physical experience of being submerged into water” (Murray, 1997, p.98), as “the player’s sensation of

inhabiting the virtual environment represented onscreen” (Calleja, 2011, p.220) or even as “a work of mind” in terms of the mind fantasizing inhabiting a virtual world (Walkerdine, 2007, p.19). Ryan (2009) identified immersion as a characteristic of digital games and distinguished two main types of immersion, ludic, which focused on the player's physical actions, and narrative immersion, which was characterized by the engagement of the player's imagination. Further in Ryan's typology of narrative immersion, she distinguished spatial, temporal, emotional and epistemic immersion. Although in Ryan's typology spatial immersion was contained in narrative immersion, other typologies saw spatial immersion as a separate category which, nonetheless, was associated with narrative (Ermi and Mayra, 2005; Calleja, 2011).

In his conceptual model for the analysis of digital game involvement Gordon Calleja (2011) criticized the fundamental immersion metaphor of “plunging into the virtual environment” and enhancing a binary and vague view on player experience. Instead, Calleja put forward the term “incorporation” which focused on player's moment by moment involvement in the game play. Defined as “the subjective experience of inhabiting a virtual environment facilitated by the potential to act meaningfully within it while being present to others” (Calleja, 2011, p. 219), incorporation was suggested by Calleja as a way of clarifying the confusion regarding the use of well-known terms in the gaming research literature. A characteristic example of such confusion relates to the immersion metaphor. The “metaphor of immersion as deep absorption [has become] conflated with a metaphor of immersion as traversable space habitation” (Calleja, 2007a, p. 94). Effectively, in his

model Calleja analyzed player experience based on dimensions of player involvement. Calleja claimed that player involvement can be tactical, performative, affective, shared, narrative and spatial. In spatial involvement Calleja considered the player's effort to locate himself/herself in the larger game area which cannot be seen on the screen. In addition, Calleja (2011) considered gameplay an ergodic form of engagement (Aarseth, 1997), which is not limited to the player's direct input, but is connected to the player's cognitive effort. In this context, consulting an in- game map relates to the player's spatial involvement, thus spatial immersion.

Another aspect of spatial immersion and its connection to embodiment was brought up by Farrow and Iacovides (2013). Referring to Bayliss work, Farrow and Iacovides argued that during game play the player experiences the game world through enacted embodiment, a form of meaningful enactment which is manifested through the player's physical actions (gestures, mimics etc). According to the above researchers, enacted embodiment is connected to and facilitates player's immersion. In this context Farrow and Iacovides criticized Calleja's model for "suspending the issue" of digital embodiment. In essence, Farrow & Iacovides (2013) argued that although Calleja's model distinguishes a series of elements of player involvement, it roughly touches the problem of digital embodiment. Effectively, Farrow and Iacovides (2013) alluded to the philosophical movement of Phenomenology and the work of Husserl and Merleau-Ponty, in order to emphasize the role of the lived body as the center of experiences. Merleau-Ponty's ontological interpretation of embodied experience which stresses on how the body

experiences sensory information, can contribute greatly to the understanding of the new forms of human-computer interaction.

Although immersion is independent from the existence of a compelling digital world (Ryan, 2009; Calleja, 2011), the richness of technological tools that are used in digital game creation contribute to the successful design of immersive experiences. By design, in some digital games, game space is endless, whereas in other games, game space is limited. Besides, the degree of embodiment in digital worlds varies. Thus, apart from games providing a whole-body interaction, digital embodiment can take the form of a more human-like avatar, or not and the possibility for the player to see the body of his/her avatar on screen or through the avatar's eyes. For example, in Minecraft as in many first-person shooter games, embodied experience is maintained as the game adapts to the position of the player. As a result, the player sees on his screen what his/her virtual self sees while moving in the game world.

Digital media are clearly - although not exclusively - connected to ergodic literature. A term coined by Aarseth, ergodic, provides an explanation on how the narrative and the interactive are linked in digital media. The term “ergodic” is derived from the mixture of two Greek words, «ἐργον» and «ὁδός», to specify the reader's “non-trivial effort” to “traverse a text” (Aarseth, 1997). Aarseth argued that ergodic literature is not medium – specific. On the contrary, it only requires the medium possibility to allow text iteration. In other words, a reader may apply ergodic literature in many different kinds of media and texts, either with paper-based, wooden or an electronic medium. Typical examples of

ergodic literature are ancient Egypt wall inscriptions, the I Ching Book of Changes, Apollinaire's Calligrammes, Weizenbaum's ELIZA, MUD games, as well as the vast majority of current digital games. The above have one thing in common: the presence of a certain text that cannot be accessed unless the reader makes a particular effort to "read it". This effort, according to Aarseth, differs from the conventional reading of books. It relates to a set of rules of "non-trivial" effort that are usually "contained" in the text itself. Thus, Aarseth mentioned, ergodic literature asks the reader to constantly select his/her action during his/her reading process. Furthermore, in many cases the medium performs its own calculations that are reflected on the text to be "read". This is the case of the digital games referred to in this thesis.

2.5 Defining narratives

The existence of narrative throughout human development can be viewed as an ongoing process, assimilating critical stages in human thinking. Dating back to Aristotle's *Poetics* (*Περί ποιητικής*, 335 BC), the Aristotelian concept of narrative construction gave birth to the classical understanding of narrative. Aristotle considered the plot unity as a critical element of narrative, consisting of three specifically defined and separated key stages: a beginning, a middle and an end. The Aristotelian basic principles of narrative are traced in the foundations of Narratology as an initial systemization of fundamental aspects of narrative.

In the 20th century literary studies saw four main narrative movements, which, although significantly different, shared “a common interest in text as such”, leaving out the study of the intentions of the author or the conditions of the creation of the narrative. (Polkinghorne, 1987; Czarniawska, 2004). Russian formalism, US new criticism, French structuralism and German hermeneutics made great efforts to analyze narrative through the knowledge and achievements of their time. Furthermore, the privileged status of grand narratives relented to a new narrative condition. In “The Postmodern Condition: A Report on Knowledge” (1979) Jean Francois Lyotard saw a divide between two forms of knowledge which was broadened by the technological advancements of the post - war period. The established narrative form of knowledge, grand narratives illustrating large-scale theories of the world, constituted a means of retaining order and stability. At the other extreme, the scientific knowledge that resulted from modern society development fostered a distrust to the monolithic view of grand narratives and a tolerance to diversity. To this end, Lyotard supported the use of little narratives as a reasonable way of describing world transformations. Marking a denial to what is considered “objective”, Postmodernism focused among others on the organization of knowledge, dissociating knowledge from science. Leaning towards a functional aim of knowledge, postmodernism favored narrative as a situational and temporary means to explain small-scale concepts and practices.

The 1980’s saw an increasing interest in narrative. Jerome Bruner (1986, 1990, and 1991) claimed that narrative is more than the recounting of a sequence of events. It provides a form of meaning-making. In his article “The Narrative Construction of Reality” Bruner

(1991) argued that human mind structures its sense of reality with the aid of cultural products and symbolic systems. In this respect, a narrative “operates as an instrument of mind in the construction of reality” (Bruner, 1991, p.6). Bruner’s view was largely based on Vygotsky’s idea on the fundamental role of social interaction in language formation. In the context of social constructivist theory of meaning, “constructing and explaining” external world became, according to Bruner, a straightforward task. For Bruner this “method of negotiating and renegotiating meanings by the mediation of narrative interpretation” (Bruner, 1990, p.67) promoted the context sensitivity of narrative and enhanced its potential role in the interplay between the human mind and the external world. Effectively, narrative appears to have reached a new milestone. The narrative turned to social sciences and focused on the subject’s narratives, in order to capture the meaning of his/her actions (Polkinghorne, 1988; Czarniawska, 2004).

However, narratives are run by conventions that are related to diverse thoughts, experiences and interpretations of those participating in the narrative process. This render “constructing and explaining” the human mind a hard task to achieve. In the context of literary work, Bakhtin focused on the novel and analyzed the subject's utterances. The treatment of language as a dialogic construct beyond literature followed with the work of the Bakhtin circle and later Bakhtin scholars (Holquist, 1990). Thus, language is considered a dialogic construct where meanings result from the interplay of multiple voices or discourses of one’s thoughts and experiences (Eggleton, 1996; Holquist, 1990).

In essence, narrative has been a manifold subject to define. Among a plethora of definitions focusing on different aspects of narrative, we will concentrate on two prevailing, apparently discordant directions: literary studies and social life.

In “Dictionary of Narratology” Gerald Prince defined narrative as *“the representation (as product and process, object and act, structure and structuration) of one or more real or fictive events communicated by one, two or several (more or less overt) narrators to one, two or several (more or less overt) narratees”* (Prince 2003, p.58). Given that from an early age, humans are capable of creating narratives, Prince acknowledged that narrative exists in all human societies. Studying Greek tragedy and Homer’s *Odyssey* Aristotle saw narrative as the hero’s struggle to pass by a series of stages that form a whole. According to Aristotle narrative entails the imitation of action and the organizing of the events. Plot is complete and has a certain magnitude. The completion of the narrative results from three perfectly defined parts: a beginning, a middle and an end. For Aristotle narrative definition goes hand in hand with narrative structure:

Κεῖται δὴ ἡμῖν τὴν τραγωδίαν τελείας καὶ ὅλης πράξεως εἶναι μίμησιν ἐχούσης τι μέγεθος· ἔστιν γὰρ ὅλον καὶ μὴ δὲν ἔχον μέγεθος. Ὅλον δέ ἐστιν τὸ ἔχον ἀρχὴν καὶ μέσον καὶ τελευτήν. (Αριστοτέλους *Ποιητική* 335 πΧ, 1450, 25-30).

Narrative has been the object of study of narratology. Rooted in Aristotle “Poetics” (335 BC) and Vladimir Propp’s *Morphology of the Folktale* (1968), narrative study is strongly influenced by structuralism, which considers narratives based on patterns regarding the development of events and the narrative plot. In this context, Barthes (1977),

Greimas (1983) and Genette (1980) apprehend narrative in terms of a specific plot type. Focusing on real or fictional events, narratology considered restrictions related to the predominance of the linguistic recounting of events over their enactment (Genette, 1980), as well as requirements on the interrelation of the recounted events (Greimas, 1983).

For narratologists a typical definition of narrative relates to the structuralist legacy of story and discourse:

“story is an event or sequence of events and narrative discourse is those events as represented” H. Porter Abbot (2002, p.16).

The dichotomy that lies in Porter Abbot’s definition considers narrative as the synthesis of two parts. Story stands for the main frame complemented by the narrative discourse, which stands for the story representation. Given that narrative discourse is “infinitely malleable” (Porter Abbot, 2002, p. 17), a story can have many different narrative discourses. However, oriented towards a transmedial study of narrative Marie-Laure Ryan (2013) saw in the above dichotomy an opening of narrativity to other forms than textual representation like story worlds that, according to Ryan consist of “a static component that precedes the story and a dynamic component that captures the unfolding of the events” (Ryan, 2013, p.364).

Arguing for the social merit of narratives, Roland Barthes (1977, p.79) considered narrative as *“international, transhistorical, transcultural”, “able to be carried by articulated language, spoken or written, fixed or moving images, gestures, and the ordered mixture of all these substances; narrative is present in myth, legend, fable, tale, novella,*

epic, history, tragedy, drama, comedy, mime, painting...stained glass windows, cinema, comics, news item, conversation.” Barthes’ definition marked an opening of narrative to a plethora of media and less recognizable forms.

In this context, a distinction between two forms of knowledge has been adopted by the postmodernists. Jean Francois Lyotard considered narrative and scientific knowledge conflicting. Facing the technological innovations of the 1980s and the upcoming “computerization of society” Lyotard claimed that *“scientific knowledge does not represent the totality of knowledge; it has always existed in addition to, and in competition and conflict with, another kind of knowledge, which I call narrative in the interests of simplicity... I do not mean to say that narrative knowledge can prevail over science, but its model is related to ideas of internal equilibrium and conviviality next to which contemporary scientific knowledge cuts a poor figure”* (Lyotard, 1979, p.7). For Lyotard grand narratives had been a means to establish monolithic views as absolute truths. Instead, mini -narratives could provide local, provisional truths, of great esteem in postmodernism.

The concrete placement of narrative in the social sphere of humans was also expressed by Jerome Bruner (1991), who saw narrative as a “tool of mind”, existing in social interaction and assisting people to construct their reality. Bruner considered narrative in opposition to paradigmatic mode of thinking. He also saw the two modes as two “natural kinds” of radically different usage, providing two different “versions of the world” (1985). In this context narrative mode of thinking lays emphasis on sense, with the frequent use of factive and functional sentences. Consequently, narrative mode of thinking interprets

action emphasizing on sense, contrary to paradigmatic mode, which concentrates on reference (Bruner, 1985). The contrast of the two modes of thinking is vividly depicted in the following definition: *“Narrative is a conventional form, transmitted culturally and constrained by each individual’s level of mastery and by his conglomerate of prosthetic devices, colleagues, and mentors. Unlike the constructions generated by logical and scientific procedures that can be weeded out by falsification, narrative constructions can only achieve “verisimilitude.” Narratives, then, are a version of reality whose acceptability is governed by convention and “narrative necessity” rather than by empirical verification and logical requiredness.” (Bruner, 1991, p.4).*

Approaching narrative in the era of digital advancements, Marie-Laure Ryan defined it as *“a mental image, or cognitive construct, which can be activated by various types of signs. This image consists of a world (setting) populated by intelligent agents (characters). These agents participate in actions and happenings (events, plot), which cause global changes in the narrative world. Narrative is thus a mental representation of causally connected states and events which captures a segment in the history of a world and of its members”.* (Ryan, 2003).

Ryan’s definition viewed narrative as a mental representation that transcends the semiotic systems. It constituted a prominent definition of narrative transmediality, studying among others how digital and narrative are related. It enhanced the study of mental processes that concern a narrative, thus it acquired a cognitive dimension. The narrative definition of Ryan laid importance on the semantic dimension and on the context elements

that contribute to the narrative development. She shifted her attention from the linguistic features of the text – a common narratological practice so far – to the communication context. Ryan's definition of narrative considered among others three main degrees in narrativity that assisted her in depicting the variations and mediatic richness that characterize our current communication practices: spatial, temporal and mental. On this basis, Marie-Laure Ryan (2009) conducted the mapping of narrative, by pointing out non-narrative and narrative correlates for human mental activities. According to Ryan (2009) narrative is situated on the area resulting from the intersection of the circle for narrative to three concentric circles that appear in a Venn diagram, representing the subsets of human mental activity artifacts: thinking, semiotic objects and language. In addition to the circle for narrative, Ryan distinguished another circle that intersects the three main circles and helps in separating the human mental activities into 10 zones (Figure 2.3).

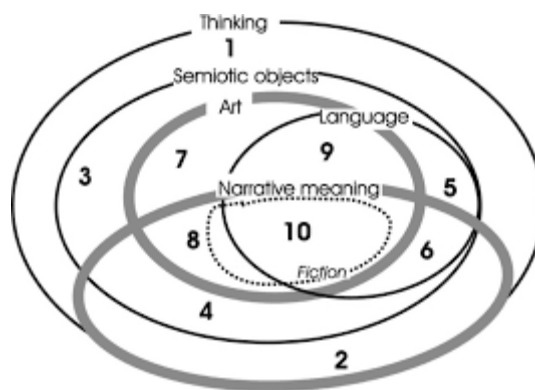


Figure 2-3: Ryan's situated narrative diagram (Ryan, 2009, p. 311)

Conforming to Ryan's diagram (2009), scattered memories that we tend to keep in our minds are not considered narratives and are placed in zone 1 of the diagram. However, organized personal memories that assist us in constructing our sense of identity are considered narratives (Bruner, 2004; Ryan, 2009) and are located in zone 2. Digital games of semiotic value that do not use language and do not "tell stories" like *Tetris* fit in zone 3, out of the narrative circle of the diagram. Computer programs like *Scratch* and *Minecraft* that occasionally create stories, even though it is not their main purpose, are located in the boundaries between zones 3 and 4. Regarding art forms, according to Ryan (2009) some paintings do not tell concrete stories, therefore are placed in zone 7, among forms of art that do not use language and have no storytelling value. However, Picasso's famous *Guernica* would probably fit in their narrative complement in zone 8. Many digital games that use language and story elements but not in a solid way, are located in zone 9. Fairy Tales and novels constitute narratives and are placed in zone 10. According to Ryan (2009), given that a new condition presupposes the existence of the previous one, the degree of narrativity of a text depends on the chain of conditions it satisfies. The above conditions were organized into spatial, temporal, mental, formal, and pragmatic dimensions (Ryan, 2009). Furthermore, Ryan (2009) distinguished narrative meaning in zones according to four dimensions: spatial, temporal, mental, as well as formal and pragmatic dimension. Consequently, spatial dimension regarded the existence of concrete characters and a setting

in the story. Situation in time and the existence of significant transformations are related to the temporal dimension of narrative. The mental and emotional reactions of the narrative agents concern the mental dimension of the narrative. Finally, formal and pragmatic dimensions concern the causal connection of the story events and the communication of a meaningful message to the audience.

2.6 New media and game narratives.

Medium's augmented role as a form of communication was concurrent with the 20th century technological innovations. Radio, cinema and television triggered more communication channels, which developed even further through the development of digital technologies. In "Understanding Media: The Extensions of Man" Marshall McLuhan (1964) declared the emblematic "Medium is the message" and put forward the medium and its characteristics apart from the content delivered. Regarding the relation between the two concepts, story and medium, Claude Bremond (1964) and Roland Barthes (1977) stressed the medium transcending nature of narrative, aiming to broaden the scope of narratology to media, other than literary written texts. However, the answer to fundamental questions related to the nature, the expressive means and the object of narratives remained open for decades. Narrative extension to various media was clearly expressed during the "Narrative Turn" (Ryan, 2013).

The influence of different types of media on the content and form of narratives has been studied by numerous scholars, such as Ong (1982) who, in the famous conduit

metaphor claimed that media serve as pipes of different shapes and potentials that affect the encoding of the message. On the counterpoint, Bremond (1964) advocated that a story maintains its' essential properties even though it is transposed among different media. Bremond's view is in line with that of Ryan who claimed that although media characteristics impose "conditions" on the narratives that are transmitted, narrative messages maintain a "conceptual core" that remains unaltered (Ryan, 2005).

Many scholars (Montfort, 2007; Ryan, 2009; Murray, 1997; Manovich, 2001) agreed that new media share some common qualities that express a new computerized culture. Manovich provided a comprehensive list of new media's main qualities like numerical representation, modularity, automation, variability, transcoding, (Manovich, 2003). A major characteristic of new media, modularity, related to their independent functions and modifications. An example of modularity that is closely related to new media narrative potential is hypertext, which allows different texts to be accessed as separate elements that construct the main text on the computer screen. Another new media characteristic that relates to narrative potential is automation. According to Manovich (2003) automation relates to users' ability to create or modify digital artifacts based on templates and algorithms. Montfort (2007) framed this characteristic as the distinction of all digital works in data (or digital documents) and programs, based on their interactive potential. For Montfort, although some data can be considered as narratives, computer programs not only "compute" but "narrate" as well. Murray (1997) referred to automation as a procedural nature of digital media, connecting it to interactivity. Using the example of ELIZA

program, a digital psychotherapist whose responses, although based on procedural thinking, were far from being convincing, Murray concluded that a computer “may be a compelling medium for storytelling if we can write rules for it that are recognizable as an interpretation of the world” (1997, p. 73). For Murray, the computer was an expressive medium, an ideal medium for representation. Suggesting the holodeck as the ideal narrative environment where virtual reality dominates, her vision is present in her words quoted in MIT Tech Talk: “We have got a storytelling technology that is able to capture more of the world than Homer’s lyre” (1998). The ongoing developments in Artificial Intelligence that provide story creating tools justify Murray’s vision regarding the creation of computer-generated narratives.

Lev Manovich saw new media in a wider cultural context, consisting “*the mix between older (and newer) cultural conventions for data representation, access and manipulation*” (Manovich, 2003, p.13). Provided that new media is not created from scratch but uses old media, it was also called by Manovich “meta-media” (2003). Manovich (2003) linked new media to Baudrillard’s (1988) post-modernist notion of simulacra, in the sense of innumerable digital copies and the absence of an original, enhanced by the collective and collaborative authorship. This absence of an original relates to the contestation of metanarratives. In other words, to use Lyotard words in his influential book *The Postmodern Condition: A Report on Knowledge* (1979), “*an incredulity towards metanarratives*” is suggested. Effectively, according to Lyotard metanarratives are outdated as a result of the computerization of the society. Hence, knowledge is easily

accessed, commercialized and fragmented. This contrasts the former cultural practices that were provided by metanarratives. Baudrillard also set the question of what is real or authentic as a reflection of our engagement with technology, which leads us to deal with symbolic representations or simulated experiences rather than tangible objects.

Livingstone and Bovill mentioned the changes that new media were about to generate (Livingstone & Bovill, 1999). Indeed, becoming personalized, adjusted to the user's needs, with variations regarding their form and contents and open to convergence, new media evoked profound changes in communication practices. So far, their thinking gains ground. New media's impact on narrative appears to boost user's personal expression, allowing the creation of many parallel social contexts in which the user can choose to enter. In new media, the narrative element not only is apparent, but it also seems to be in constant mobility: it takes different forms, it rediscovers old practices, and equally creates new schemes.

In digital games the narrative and the interactive element usually coexist (Juul 2002, Ryan, 2009; Neitzel, 2014). According to Neitzel (2014) narrativity is perceived as a virtual capacity of digital games coexisting with the game rule-governed actions. Neitzel (2014) and other scholars (Ryan, 2009; Juul, 2001) stressed the potential of digital games not only to arrange narrative elements in a story-like order, but also to "integrate a representational level depicting the player and his/her actions in the game world" (Neitzel, 2014, p. 610). Indeed, the presence of digital games shuffled the cards in the narrative theory landscape. Their strong interactivity potential relating to the player's ability to alter the story of the

game, as well as the existence of games that lacked a concrete storyline, provided some of the new issues that narratology had to cope with.

Questioning narratology's power on game analysis culminated in the ludology versus narratology debate, which ended up in the reconciliation and the coexistence between basic concepts of ludology with narratology (Frasca, 2003a; Ryan, 2001). The debate touched core issues of narratology and digital games and redefined the relations between the two apparently opposing terms. Specifically, the ludologists started from the assumption that there is no essential difference between digital games and traditional games. According to ludologists' perceptions, digital games constitute remediated games and are not considered texts (Aarseth, 1997; Eskelinen, 2001). Ludologists emphasized on rules and acknowledged the representational aspects of digital games as less important. Effectively, focusing on the significance of plot in digital games, ludologists' argument dealt with the idea that "a plot makes a story and rules make a game and they shall not meet" (Simons 2007), confronting a narratological analysis of games. Contrasting views in this debate ranged from optimistic visualizations of digital storytelling (Murray, 1997) to the criticizing of previous narratological methodologies as not relevant to the specificities of digital games (Aarseth, 2012), or even to the total denial of any narrative ground in digital games (Eskelinen, 2001). According to Neitzel (2014) the two complete opposite assumptions overlooked the multidimensional nature of digital games. To this effect, Neitzel (2014) referred to Thomsen's (1994) view on computers being a hybrid medium integrating various forms and media and relating to the "dissolution of boundaries" in them.

Regarding the presence of narrative in digital games, Juul (2001) argued that both games and narratives share some “structural traits” like quest structures, the role of protagonists in the game story and the linearity of game sessions, which, although highlights their relation, is far from giving the full picture of gaming. In addition, in one of her definitions of narrative on digital media Ryan (2005) referred to some “basic conditions of narratology” like the existence of a world and its individuals, the importance of causal relations that run this world and the effect of the world’s changes on the digital narrative:

“A narrative is the use of signs, or of a medium, that evokes in the mind of the recipient the image of a concrete world that evolves in time, partly because of random happenings, and partly because of the intentional actions of individuated intelligent agents” (Ryan, 2005, p. 7).

On that subject, Ryan (2009) also claimed that not all digital games have a narrative basis, admitting the existence of purely abstract games that deviate from the basic conditions of narrativity. Equally, Juul (2001), Frasca (2003a) and Aarseth (2012) argued that narrative theory is not sufficient to delve into the ludo-narrative variations of games. Eventually, Ryan (2009) argued for the need to enhance narratology with new knowledge in order to better understand and analyze new media, hence digital games.

The ludology versus narratology debate over, it was agreed that narrative is not the “raison d’être” of games, but forms a stimulant for players’ imagination (Ryan 2001). Regarding it rather as a matter of coexistence, it was accepted that basic concepts of

ludology like rules and player interaction, could be used along with narratology concepts like characters, settings and events (Frasca 2003b).

2.7 Children's interactive narratives

As mentioned earlier, narrative in digital games benefits from the narrative turn, namely the shift of narrative as an art form to a cognitive construct analyzing the reality (Ryan, 2009). Ryan's argument is further enhanced by Calleja (2013) who raised the question:

“Do we attribute narrative to the formal qualities of the game, as classical narratologists like Chatman, Prince and Genette have done? Or do we view narrative formation as an inherent aspect of human consciousness and sense-making that is imposed on all we experience, as Dennett, Bruner, among others, have claimed?” (Calleja, 2013, p.9)

Based on the distinction between two types of narrative in gameplay, author narrative and player narrative, Bryan (2013) investigated the choice dynamics and the impact of player's choices on the author narrative. Similarly, Weimin (2015) focused on how players make narrative and gameplay choices by considering the ludonarrative relationships in games. Weimin concluded that narrative and gameplay are connected, as the presence of narrative in a game depends on the gamer's interpretation and the game developer's design of the game world. From another point of view, focusing on first-person

shooter games (FPS) Pinchbeck (2009) highlighted the story as a function of gameplay. In this context for Pinchbeck non-player characters (NPC) have a diegetic quality that advances the game narrative. Another insight on the digital game structure was put forward by Linderoth (2013) who saw games as a context for storytelling and focused on the type of gameplay mechanics that enhance game narrative.

Regarding the narrative framework of digital games, two kinds of narratives coexist and intermingle, standing for the player and the author of the game. In this correlation, the player's experience becomes a factor of importance for the advancement of the game narrative. Calleja (2013) acknowledged a game narrative scheme, which combined experiential and formal aspects of digital games. As a result, Calleja saw two broad levels of narrative:

“that which is pre-scripted by the designer and implemented into the game, and the ongoing creation of story through player interpretation and practices”. (Calleja, 2013, p.10)

Consequently, narrative in digital games acquires a double meaning: not only does it refer to the “story” of the game, it also refers to the expression of the player’s experience in the game space (Gavrielidou & Chronaki, 2016). These observations are in line with Ryan’s suggestions on “game narratology” and in particular her remarks on the need to expand the “toolbox” of narratology in order to “embrace” the study of game narratives (2022, p. 6). Specifically, in a retrospective look at the subject of narratology and digital games, Mary Laure Ryan (2022) acknowledged an additional "level" of narrativity, player’s own story,

which is formed by the actions of the player himself/herself. Ryan also pointed out that this type of story could be “recorded by a game camera and shared with other gamers” (2022, p. 5). A further point made by Ryan concerned the shortcomings in the study of verbal communication that constitute narratives.

In particular, with regard to children as digital game players, their interactions have not been sufficiently studied. So far, research has focused on emergent interactive storytelling processes with the aid of Virtual Reality tools addressed to children (Swierczynska-Kaczor, 2024; Yamada-Rice, 2021; Baceviciute et al, 2012). Cases that have not been adequately examined concern children as digital game players’ interactions that take place during or beyond the game, interactions between players from a distance or face to face, and interactions that are often recorded or shared as an integral part of the gameplay. These narratives may be verbal or supported by other types of communication such as movement, the written word, image or sound (Gustafsson, 2021). However, these narratives are a necessary and widespread way for children as digital game players to communicate and often serve the strategies of the game and the coordination of the players. The players' communication can take place in parallel with the playing of the game, using a digital tool other than the game itself, like the communication of players with *Discord* during an online multiplayer game like *Fortnite*.

Observing children playing digital games, I noticed that they tend to create their own narratives based on their gameplay experience. This narrative also involves player interactions, namely interactions with the digital game environment, or interactions with

other players or non-players related to the child's activity. The above interactions "fuel" the development of the narrative. On the whole, the narratives of children as digital game players are of an ongoing nature, and often evolve in parallel with the course of the game. In this paper I invent the term "children's interactive narratives" to describe the players' narratives that result from the interactions that take place among children as digital game players during the digital game or triggered by the digital game. Children's interactive narratives should not be confused with interactive narratives, as they express different types of narrative creation. More specifically, in new media, interactive narratives involve the creation of non-predetermined stories, based on the user's choices that advance the story, according to the architecture of the program and a given storyline.

Thus, it is worth considering what may play a role in children's interactive narratives formation. How are the narrative element and the interaction element connected and how do they shape children's interactive narratives? How are the digital and real world related? To what extent the narrative and the interactive affect the boundaries of the two worlds, on the edges of which players operate? How is the child player situated in these circumstances? In order to find answers to these questions, I need to look for methodological solutions that will allow me to study children's digital gameplay interactions. In particular, Ervin Goffman's consideration of play as the object of the study of micro-sociology of everyday life, as well as Mikhail Bakhtin's theory on the role of the narrative could provide a fertile ground.

2.8 Conclusionary points

Interaction and narrative constitute important elements in children's play. In digital games interaction between the player and the game environment is described as interactivity and relates to the advancement of the game narrative. Player interactions with the game environment also concern space navigation, immersion and ergodic literature. The concept of narrative has seen critical changes after the "narrative turn", which emphasized on the role of narrative as a "tool of mind" to analyze reality. Narrative provides an important element of digital games, which relates either to what is prescribed by the game designer, or to the ongoing creation of the player's own story throughout his/her game experience. So far, young players' verbal and nonverbal interactions have not been sufficiently studied. In this study I suggest the term "children's interactive narratives" to describe the narratives that result from the interactions that take place among young digital game players. Based on the above, the thesis focuses on how the narrative and the interactive elements are being interrelated in children's interactive narratives. For this inquiry, appropriate theoretical and methodological tools will be searched within Ervin Goffman's view of play as the object of micro-sociology of everyday life and in Mikhail Bakhtin's work on the role of the narrative and dialogism.

CHAPTER 3

Frames and Dialogism: Theorising Children's Narratives as Digital Game Players

As discussed in the previous chapter, players' interactions are often expressed in the form of narratives. To this, the term "children's interactive narratives" was introduced to discuss the narratives that the players produce based on their own gameplay interactive experience. An initial consideration in discussing children as digital game players' interactions was that of identifying the different ways that children as digital game players interact and explore their relation to social and other contributing factors. A further significant aspect was the focus on children's dialogic relationships embedded in their gameplay interactions. For this, I searched for appropriate theoretical and methodological tools that, on the one hand, enable an ethnographic inquiry on children's play, and on the other, they focus on the narratives as vehicle for interaction. In this respect, Goffman's frame theory and Bakhtin's dialogic theory seem to offer suitable methodological tools. Thus, both theories share the detailed look at the player of the game, observing him/her as an individual as well as part of a group, focusing on narrative as a way of expressing him/herself. The above theories have been considered as complementary in the context of ethnographic discourse analysis (Roth – Gordon, 2021) and in qualitative study of players' online interactions (Cresswell & Hawn, 2012). However, so far, the combination of the above theories has not been observed in the study of players' narratives, nor have these theories been applied in the study of children.

In this chapter I will describe the main principles of Goffman's frame theory and I will draw attention to the use of frames as a tool to interpret digital game situations. Furthermore, I will indicate a selection of tools from Bakhtin's dialogism theory to discuss social implication on digital gameplay and investigate the importance of the utterance in "players' interactive narratives". Finally, I will present how these two theoretical concepts could be synthesized for this study.

3.1 Goffman's frame theory

The concept of frames has been set to interpret how the participants of a communicative situation put their knowledge into practice in order to integrate new experiences. The term originates from Gregory Bateson's essay "*A Theory of Play and Fantasy*" (1972). On the occasion of two young monkeys playing, Bateson was able to discern that the participant organisms were able to exchange metacommunicative signs (signals). Thus, the exchange of signals between the two participants related to the message of a friendly play gesture or a threat, and resulted in either of the following frames of "play" or "combat". According to Bateson the concept of "psychological frame" comprises the exchange of a set of non-verbal messages between two individuals on a certain occasion, within a limited period of time. Based on Bateson's concept of "psychological frames", Erving Goffman expanded the study of frames in linguistic environments. He defined frames as "schemata of interpretation" of human experience (Goffman, 1974, p.21), which are based on the subject's abstractions about his/her perception of reality. According to

Goffman's theory of frames (1974), framing provides an ongoing process of data interpretation and assists in structuring message meaning. Goffman stressed that by nature humans use framing techniques by contextualizing information. To explain his framing theory, Goffman (1974) used the metaphor of the picture frame. As the picture frame holds together a picture and assists the individual in focusing on the picture itself and not to be disturbed by its surroundings, the frame represents structure and content, by enhancing the individual's organizing and interpretive efforts based on his past experiences. Thus, to comprehend an utterance the listener is asked to place it in the correct frame.

Goffman's frame theory can be seen in conjunction with his earlier work on social interactions. More specifically, Goffman (1959, 1961) dealt with the concept of interaction, treating it as the subject's "performance", which is determined by the environment and the coexistence with others. In the book *"Encounters: Two Studies in the Sociology of Interaction"* (1961), Goffman conducted an ethnographic study on the interactions of board game players. Applying ethnographic methods in the context of micro-sociology, Goffman explored face-to-face interactions between players and formulated correlations between social gatherings for the purpose of play and "serious" social life. Thus, Goffman recognized that games provide frames which contribute to the formation of meanings where social interaction is ritualized. In particular, in his work *"Encounters: Two studies in the sociology of interaction"* (1961b) Goffman identified the existence of frames in games, mentioning Bateson's original use of the term:

“In Bateson’s apt term, games place a “frame” around a spate of immediate events, determining the type of “sense” that will be accorded to everything within the frame” (Goffman, 1961b, p. 17-18).

In this respect, Goffman referred to the game as a framed space of meaning creation. He also stressed the permeable borders of the game, denoting that the players’ perspectives may influence the game processes or even “break the frame”. Thus, game boundaries constitute a separating “membrane” between the game world and the wider world. Goffman acknowledged the importance of the game rules and highlighted the relations developed between players. As a result, Goffman distinguished different forms of social interaction in the game manifestations of social life where individuals follow a certain ritual, form groups based on the concept of trust, support each other, disagree or humor. According to Persson (2019), Goffman included the concept of “interaction order” in his work (2019, p.1), meaning that there is “a frame analytic continuity”, marking the study of multiple aspects concerning human interaction. As Μακρυνιώτη (1996) indicates in her introduction to the Greek translation of *“Encounters: Two Studies in the Sociology of Interaction”*, Goffman used the metaphor technique to “map” social instances. Inspired by dramaturgy, Goffman approached individuals like actors playing roles on stage. Thus, Goffman’s metaphors compose the study of social interaction as an ordered activity, namely an activity of recurring patterns like the rituals, the image of “self” and relations with “others”.

As frameworks for the interpretation of events and human experience, frames have been largely used in social sciences, with particular reference to the areas of micro-

sociology, cognitive psychology, linguistics, political science, communication and media studies. In her article “Discourse Analysis - What Speakers Do in Conversation”, Tannen (2016) provided a vivid example of a mistake in interactive frame identification, referring to Orson Welles’ radio performance of H. G. Wells’ “War of the Worlds”, where listeners did not identify the frame correctly. Consequently, they mistook the radio play for a real newscast about alien invaders.

In her retrospective study of the multiple terms that have been used by scholars of a variety of disciplines to indicate the multiple connections between the subject’s past and new experiences, Tannen (1992) mentioned among others the terms “schemata”, “frames”, and “structures of expectation” referring to the work of Bartlett (1932), Bateson (1972) and R. N. Ross (1975). Focusing her research on how framing functions in real discourse and oral narratives, Tannen (1992, 1994) acknowledged the role of the context as a factor for the organization of subjects’ prior experience. However, in frame analysis the relation between “context” and “frame” has caused concern. Specifically, Goffman appears to override the general belief of his time where the context extra-linguistic elements were dissociated from any utterance (Αργύρης, 2018). Far from considering context a “residual category”, in Goffman’s interactional analysis (1974) context becomes an essential element. Thus, according to Goffman a discourse is characterized by the existence of internal and extra-linguistic elements which act in conjunction.

Moreover, Goffman’s frame theory and subsequent studies of Gumperz (1982), Tannen (1984, 1994) and Rampton (2017) on social meaning construction through face-

to-face interactions of everyday life, contributed to the Interactional Sociolinguistics qualitative interpretative approach, which focuses on the analysis of clues that speakers use within an ethnographic context. Seeking to provide a “worm’s eye” (Rampton (2017) on communication instances and to interpret interlocutors’ conversational exchanges (Gumperz, 1982), Interactional sociolinguistics make use of frames (Goffman, 1974; Gumperz, 1982; Tannen, 1984) as contexts that interlocutors have with respect to situations or events. Thus, in a conversation between two digital game players, the meanings they create are in accordance with their game experience because they share frames. For example, digital game players use a particular game terminology which includes words like “spawn”, meaning popping into existence in a game world. As a result, in a conversation between two digital game players when the speaker talks about spawning, he/she is understood by the listener. On the contrary, in a conversation between a game player and a non-player, the use of the word “spawn” by the speaker is probably not understood by the listener because the frames of the two interlocutors are conflicting, therefore the meanings that the interlocutors create do not match.

A useful concept for the analysis of verbal interactions in the context of interactional sociolinguistics is the aforementioned framing, which represents an identifiable structure of the context of the speakers. In a frame, events, subjects and objects are connected to an extent that affects people’s perception of reality. Other concepts introduced by Goffman (1974) are the footing, which assists in analyzing the various degrees of participation through speaking or hearing in a certain frame and keying, which

consists of the speakers' utterances or actions that indicate the manipulation of multiple interconnected contexts. By analyzing a speaker's communicative choices, interactional sociolinguistics study the contextualization cues as "representative of speakers' socio-culturally familiar activities" (Gumperz, 1982, p.199). According to Gumperz, contextualization cues are features "by which speakers signal and listeners interpret what the activity is, how the semantic content is to be understood and how each sentence relates to what precedes or follows". If a contextualization cue is correctly interpreted by speakers, it relates to shared understanding and remains unnoticed. Contextualization cues can be verbal and nonverbal signs. Nonverbal cues can be gestures, facial expressions or style of body movement. Other contextualization cues are prosodic like intonation and paralinguistic features like laughter, pausing or hesitation. The interpretation of contextualization cues relates to conversational inference (Gumperz, 1982; Jaspers, 2011), a context-bound process taking into consideration the general context, the speakers' personal background and conversational norms. Finally, another contribution of Goffman (1974) to Interactional Sociolinguistics is the use of production and reception formats. Accordingly, production formats result in three distinct roles of the speaker (animator, author, principal), whereas reception formats concern three distinct roles of the listener (primary addressee, overhearer, eavesdropper).

According to Interactional Sociolinguistics people are considered as "intensely socialized beings who at least partly create or actualize their (unequal, socially stratified) societies" (Jaspers, 2011). To this, discourse is seen in a social constructionist view where

language has a prominent role. However, habits and routine behavior (Giddens, 1984; Jaspers, 2011) or even structures of expectations (Tannen, 1992; Del Prete, 2005) constitute substantial frames inside which communication among speakers is achieved. Effectively, social meanings are produced through social interaction and carry to a certain extent people's communicative needs and strategies (Coupland 2007; Theodoropoulou, 2014).

Although interactional sociolinguistics mainly concern face-to-face interactions (Gumperz, 1982; Tannen, 1992), the increasing need for sociolinguistic analysis of computer-mediated communication, urged Rampton (2017) and Theodoropoulou (2014) to suggest that Interactional Sociolinguistics should also consider the interface between face-to-face and digital interaction. Indeed, Rampton (2017) saw in digital interaction the development of “new forms of digital sociality” that could be successfully analyzed with the use of the above methodology. Theodoropoulou (2014) suggested that Interactional Sociolinguistics could assist in the study of the digital medium and how computer-mediated communication affects the message addressed to the users.

3.2 Frames and digital games

As mentioned earlier in this chapter, frames provide a useful tool to structure and interpret our experiences. However, technological developments also affect our experiences and the ways we process and interpret them. In his book *“Framing Social Interaction, Continuities and Cracks in Goffman's Frame Analysis”* Persson (2019) argued that digital games support different ways of frame construction. Specifically, conducting

comparative participant observations between face-to-face and online chess, Persson distinguished difficulties for online players in identifying the game situation and their co-players, who are not in physical proximity and may be anonymous. Persson also mentioned differences in treating frame disputes, meaning that in digital games players handle cases of disagreements in their interpretations of what's going on.

The presence of frames in digital games has been identified and described by Deterding (2009) as follows:

“The video game frame transforms-represents other given activities into something voluntary, autotelic, engrossing, and without consequence; it organizes the gaming encounter into a nested structure of the central, more formalized “play” and surrounding preparatory, parallel and follow-up activities or “spectacle”, and it is spatially and temporally delineated by metacommunicative cues or “brackets”, involving some digital device which acts as an “engrossable” (an object or event focusing and absorbing attention) and embeds structured, explicit, preset rules, likely with competition towards an explicit goal”. Deterding (2009, p.2)

Investigating how the frames are created by the player who, although being part of the game's magic circle, either is not on the screen, or is present through an avatar, has been a challenge for researchers. Deterding (2009) distinguished the qualities of frame analysis that apply to digital games and provided solutions to border cases of gaming as regards to the magic circle metaphor. Specifically, he referred to the comprehensiveness of analyzing metacommunicative signs, as well as the ability of multiple frames to be nested and

analyzed. Thus, according to Deterding, frame analysis can be of use in cases like staged games within games, boundary blurring in alternate reality games, pervasive games and hybrid forms of playing in Massively Multiplayer Online Role-Playing Games. Linderoth (2012) suggested that digital game players have the tendency to use primary frame elements of the real world to uphold frames of their existence in the game world. Puente Bienvenido & Bruna (2019) focused on the study of ritualization in digital game frames. Frame analysis has also been applied in Calleja's "digital game involvement" conceptual model (2007b) as a tool to investigate player involvement and immersion. It has equally been applied in cases of pervasive games (Stenros, 2008), as well as in cases of language play taking place in digital contexts (Αργύρης, 2018) and cases of identity and language construction in online communities (Sebba, 2007). Besides, Sierra (2016) examined cases of interactive frames where speakers used digital game references, and Σαριδάκη (2016) used frames to analyse gameplay interactions of children with special needs.

Based on Goffman's observations that a frame includes activities beyond the participant's main line of activity, Glas et al claimed that human interaction implies the existence of multiple "peacefully existing frames" (Glas et al, 2011, p.144). Similarly, applying Goffman's frame theory to multiplayer online games like *World of Warcraft*, Glas et al stressed on the social character of games and considered them "arenas of social interaction" (Glas et al, 2011, p.155). In this regard, Glass et al advocated the presence of a dominant "game frame", where new frames are added, even though this was not originally designed by the game. In the case of *World of Warcraft* these new frames concern

role play, gold selling, speed running and the use of the game as a platform for player's networking. Glass et al associated the dominant game frame and the new frames to three types of contexts: the social, the fictional and the game context.

An interesting suggestion on the use of frames as an ethnographic way of approaching children's digital gameplay is Mayra's (2007) "contextual game experience model", focusing on the interactions between the player and the game. These interactions are affected by a number of contextual layers that are not restricted to the heart of the "gameness" of a game, as mentioned by Juul (2003b), Mayra (2007) and Glass et al (2011). According to this type of game analysis frames are seen as multiple arenas that exist in and out of the game world and affect the player's experiences in various ways. Based on Ermi and Mayra's gameplay experience model (2005), the subsequent Mayra's work (2007) stresses on how gameplay situations are defined by analyzing players' experiences on the basis of multiple contextual layers or frames. Player's gameplay experiences are studied as a synthesis of the player's three types of immersion (sensory, challenge-based or imaginative) in conjunction with immediate social contexts, immediate personal contexts, contexts provided by the earlier forms for Game and Play, the contexts for digital game production and the wider context for social norms and values (*Figure 3.1*).

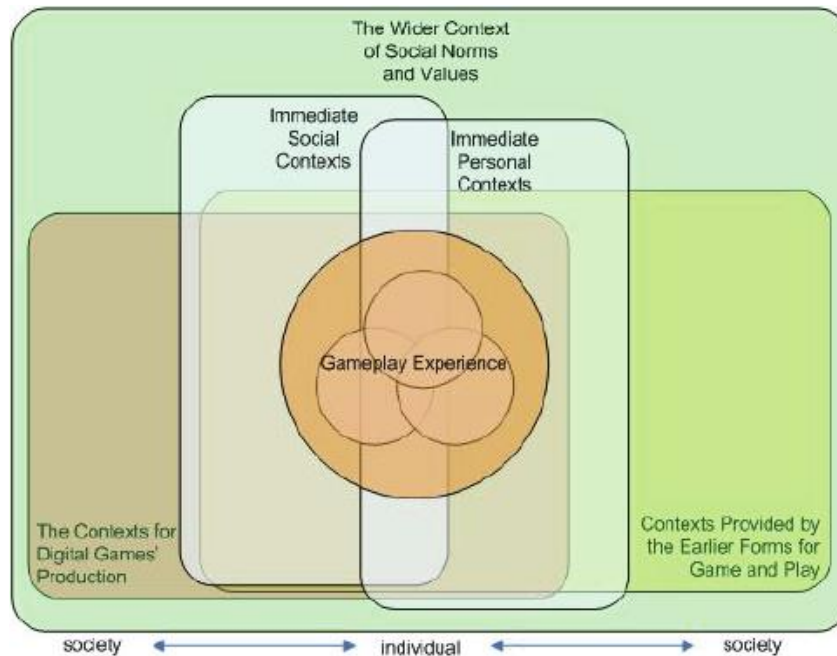


Figure 3-1: Contextual Game Experience Model. (Mayra, 2007, p. 813).

Developed in two phases, the “Contextual Game Experience” model identifies immersion as a component of gameplay experience and suggests three aspects of gameplay immersion, referring to gameplay experiences that happen during the gameplay (Ermi and Mayra, 2005). First, sensory immersion relates to audiovisual features of digital games. Second, action-based immersion is connected to the player’s reactions to motor or mental skills challenges during gameplay. And third, mental immersion relates to the player’s use of imagination while playing a digital game. However, playing games is often interlaced with other activities and contexts of the player’s social life. Referring to Johan Huizinga’s concept (1955), Mayra claims that playing digital games “breaks or expands the magic

circle” (2007, p 811) extending digital play from the core of the digital game to multiple contexts and affecting meaning formation.

According to this model of analysis, children as digital game players’ experiences are related to their immediate personal contexts, providing information on their playing habits, preferences and motivation. Children as digital game players’ immediate social contexts concern family and friends and their attitudes regarding digital games. In general, contexts provided by the earlier forms for Game and Play contribute to the players’ “games literacy” and shape their gameplay experiences. In many games, players’ experiences also relate to contexts for digital game production. Forming an individual or group activity, inevitably, gameplay falls into the wider context for social norms and values.

Consequently, current research findings suggest that frames form useful “tools” that assist in the understanding of digital online gaming for two reasons: First, considering the online game and the player’s position either inside or outside the magic circle is not applicable. Second, online digital games constitute arenas of player interactions and social interest that should be further explored. In this respect, a digital game is represented by the game main frame which also comprises other frames. According to players’ gameplay choices, digital game frames are connected to in game contexts and the real-world contexts.

Based on the above, in this study the use of frames as a tool to interpret children’s gameplay interactions considers the distinction of three basic elements in digital games’ frames: First, rituals constitute an element that is based on the game rules, the game sequence and the beginning and the end of the game. The second frame element regards

the image of the player's "self" and the third element concerns the player's relations with "others". These elements were discussed in Goffman's works (1959, 1961, 1961b, 1967, 1974), and could equally be applied to digital game frames. Specifically, the ritualized nature of digital game players' interactions is largely based on the game rules. Thus, accepting the game rules means sharing the game values and being part of a group of players. Examples of the rituals that children as digital game players follow, are noticeable from the beginning of the game: an online game like *Fortnite* starts with players' oral communication, in order for them to locate each other on the game map and plan their game strategy. Regarding the image of self, children players tend to put efforts in order to present a good image of "self" towards "others". This can either be the image of the child's «self» in the real world, or the child's avatar in the digital game world. Thus, children often express their satisfaction on their game accomplishments, or take care of the appearance of their avatar, choosing the skin that will make it special and appealing to others. Finally, relations with others concern cases of fun, cooperation or disagreements, and are equally met in online games, as well as in cases of children players interacting with non-players, who happen to share the same physical space.

Another way of analyzing gameplay interactions is the study of players' drawings that depict different game frames. Digital game frames are understood according to Deterding's (2009) definition mentioned above, and refer to specific snapshots of the game and their connection to the personal or social contexts that affect children- players (Mayra, 2007). This method of studying frames can be useful for capturing the experience of

children- players, as children show a preference for expressing themselves through painting (Merriman & Guerin, 2006; Cauduro, et al, 2009). The analysis of children's drawings in the current research considered previous research in the field of children's drawings analysis, as well as methods of digital games' analysis (Schell, 2008). It focused mainly on the content of the drawings (Franzosi, 2004; Merriman & Guerin, 2006; Stiles & Gibbons, 2000). Thus, the drawings were examined for evidence of the concept of rituals, as studied by Goffman (1961b, 1967). Specifically, the drawings' analysis focused on the portrayal of the game rules, through the depiction of game mechanics (drawings of the game buttons or player moves) and other game elements like drawings of the game setting, game objects (tools and weapons) or symbols. Other elements that refer to the analysis of children's drawings with regard to rituals concern the depiction of the game sequence. Thus, the drawings analysis also focused on the depiction of the beginning, middle and end of the game, the game story and the player's story as a reflection of the player's experiences and emotions. Finally, elements in drawings concerning the player's joining and leaving the game were also considered indicative of game rituals.

To summarise, based on Goffman's frame theory and research findings on its application to digital games, my approach in the current study encompasses the reading of digital games' frames, and in particular the frame elements of the game rituals, the players' image of "self" and the players' "relations to others". In this respect, the study analyzes the research data collected from the observation of children - players' interactions and children - players' drawings, which will be presented in detail in the following chapters.

3.3 Bakhtin's dialogism theory

One of the leading philosophers and literary theorists of the 20th century, Mikhail Bakhtin critiqued a formalist approach to language as an abstract system. In his essay "*The Dialogic Imagination*" Bakhtin (1981) countered language abstraction with discourse, where any utterance is a response to a previous utterance, providing a stimulus to a future response. Thus, Bakhtin attempted to define dialogism based on the principle that nothing exists in itself, but only in relation to other things (1981). Effectively, subjects' efforts to communicate are considered interactive phenomena that stem from particular social, cultural and historical spaces. As a result, dialogism is embedded in all cultural products, given that "their construction is based on the interplay of varied discourses, ideologies, world-views and subject positions" (Chronaki, 2009, p.120) and can be used for the discussion of language as a "dialogic agent" in complex classroom events (Chronaki, Planas & Svensson Kallberg, 2022). Regarding dialogism, Holquist (1990), Bakhtin's main scholar, stressed on the recurring theme of studying the relation between two entities: "self" and "other", or the thought and the action (1990, p.19).

Bakhtin chose the novel as the literary genre that depicts in a comprehensive way the language's dialogical character. Far from being confined to the canonical characteristics of the specific literary genre, Bakhtin saw in the novel the possibility to host a philosophical view of human existence. Bakhtin stressed that "What is realized in the novel is the process of coming to know one's own language as it is perceived in someone else's language,

coming to know one's own conceptual horizon in someone else's horizon" (1981, p. 365). Thus, Bakhtin's analysis of the novel emphasizes on the concept of the dialogue and the sense of the "otherness" (Holquist, 1990).

According to Bakhtin, truth "is born between people collectively" (1984, p. 110). Therefore, people interact and through their interactions arise different points of view. However, there is a great complexity in human views and discourses. As Morson and Emerson put it, "For Bakhtin, the novel, like "self", is a highly complex combination and dialogue of various voices and ways of speaking, each incorporating a special sense of the world". (1990, p. 218). Specifically, heteroglossia is understood as "multi-languagedness" (Holquist, 1990), and refers to the fact that the language a person speaks is always in relation to other languages. As a result, each one of us speaks several languages that reflect our social experiences. Holquist (1990) underpinned that all utterances are heteroglossic, given that they are shaped by a multitude of social influences. Studying Bakhtin's writings, in his book "*Voices of the Mind*" James V. Wertsch (1997, p.53) raised the question "Who is doing the talking", as a means to explore the multiple facets of a speaker's voices within an utterance. Wertsch stipulated that we should "expect more than one answer" to this question, marking the multiplicity of different voices from the part of the speaker. In Bakhtin dialogism theory, heteroglossia and polyphony are complementary. According to Bakhtin (1984), polyphony marks the diversity of simultaneous voices and points of views, which in synthesis form the "truth" of the speaker. Holquist described polyphony as "multivoicedness" (1990). Specifically, Fyodor Dostoevsky's novels constitute typical

examples of polyphony, as many different voices are embedded within an utterance, which is not subordinated to the utterance of the author. Thus, in the context of a novel, whereas heteroglossia describes “the diversity of speech styles in a language”, polyphony relates to the “position of the author in a text” (Morson and Emerson, 1990, p. 232).

According to Holquist (1990), an important interpreter of Bakhtin’s works, dialogism was inspired by Einstein’s relativity theory in the sense of overturning the absolute space and time advocated by Newtonian cosmology. Bakhtin acknowledged that there is no absolute homogeneous space that contains everything. On the contrary, according to relativity, things are conditioned by our perceptive faculties. Thus, it is imperative that we must choose a certain viewpoint over another. Furthermore, Holquist advocated that in Bakhtin’s work simultaneity in interaction provided the cornerstone of dialogism. In this context, simultaneity makes it possible for two bodies/subjects to be related, occupying different spaces at the same time. Therefore, the basic rule of dialogism lies in the fact that every human subject perceives things according to the relation between two distinct notions, “self” and “other”. This antithesis is reflected in the way the subject understands his/her world and creates meanings. Bakhtin used the term transgression to describe how two people perceive things when they confront each other: even though they both have to deal with different sets of conditions, the perceptions of each one of them could be considered through their positioning in time and space. Thus, dialogism appears to serve as an endless source of pluralistic versions of how “self” is related to “other”. Transgression is strongly related to another dialogism concept, the chronotope. Coined

by Bakhtin (1981) the chronotope expresses the spatial and temporal integration of human action within an environment. A compound word formed by joining the Greek words «χρόνος» (time) and «τόπος» (space), a chronotope is marked by complex and interconnected ideas and conveys meaning (Bakhtin, 1981; Holquist, 1990). Mikhail Bakhtin introduced chronotope as a tool for literary analysis. Effectively, in his essay “*Forms of Time and the Chronotope in the Novel*” (1981) Bakhtin developed a twofold analytical use of chronotopes. The earlier description of chronotopes as main literary categories, followed the subsequent study of the chronotopes in the last section of the essay, written almost forty years after the first part of the essay. According to the latter, chronotopes were considered as smaller consisting parts in a literary work, indicating the unity of space and time. As claimed by Πινακούλας (2011), in the last section of Bakhtin’s essay “*Forms of Time and the Chronotope in the Novel*” prevails the potential of chronotopes to be used in other directions than the literary works content. Besides, Morson & Emerson (1990) suggest that Bakhtin’s chronotope is open to various approaches. For example, Matusov (2015) applied the concept of the chronotope in the field of education, stressing for its quality to set affordances and limitations for the learner. In addition, Marjanovic - Shane (2011) distinguished different types of chronotopes in children’s play according to their actions and utterances. From Cultural Studies and Architecture to Literary Studies and Pedagogy, chronotopes are studied in multiple ways. However, Bakhtin’s first study of the chronotope focused on the “literary artistic chronotope”, suggesting that the narrative element becomes the spatial and temporal frame in which the

subjects' interactions occur. Thus, according to Bakhtin's approach, a chronotope is considered as the literary performance of time and space in language and discourse.

3.4 Dialogism in digital games

As stated above, Bakhtin's dialogism is closely related to the interaction of two persons and is set in the context of a narrative involving an exchange of experiences and opinions. However, although children's play was not a subject of Bakhtin's study, the analysis of children's narratives benefited from Bakhtin's theories of dialogism. More specifically, Cohen (2011) applied Bakhtin's ideas of carnival and its discourses to analyze young children's pretend play. Cohen (2009) equally applied Bakhtin's theories of dialogism and heteroglossia in young children's pretend play. In addition, Marjanovic - Shane (2011) focused on children creating language games to express their feelings, in order to study the implications of play to teaching. The above Bakhtinian dialogic approaches to play demonstrated that, while playing, children tend to explore their world and negotiate their relationships with the social contexts. Their discourses could be analyzed in dialogic terms.

The relation between game and narrative in childhood was thoroughly studied by Vygotsky. In "*Mind in Society*" Vygotsky (1978) considered playing a game like entering an imaginary world where a child has to cope with his immediate impulses and follow certain rules. According to Vygotsky, by acting in the game's imaginary situations, the child learns to control his behavior by finding a balance between immediate perception of

objects and the meaning of the play situation. Vygotsky saw a cognitive developmental role in play, related not only to children's behavior during play, but also to language which, being a communication and cultural tool, assists the child in understanding the external world. Thus, narrative is connected to preschool children's play and can be traced in their "inner speech", while they are talking out loud to themselves (Vygotsky 1978).

Consequently, one could argue that apart from integrating the player in an imaginary world, narrative in play appears either as oral "inner speech" conversations, or as the recounting of player's actions while following the game rules. The conclusions drawn from the theories of Bakhtin and Vygotsky on the players' use of language to interact and understand the game situations in which they are involved, apply equally to digital games (Gee, 2003). According to Walkerdine (2007) and Steinkuehler (2004), by entering the game path, children as digital players assume new roles and relate their desires to a fictitious "I", reminding Vygotsky's idea of imaginary play (1978). This time, the new "I" can be a vivid digital character ready to create new narrative paths and meet "the others" who exist in his physical and/or virtual environment. Similarly, the application of Bakhtin's theory to children's digital play highlights the existence of the player "self" and its interaction with one or more "others". This interaction forms an important part of the player experience. As a result, digital game worlds can lead to the production and sharing of a plethora of narratives, based on players' game experiences (Ito 2010; Steinkuehler 2004; Poels et al. 2007). These narratives constitute dialogic relations between the player-narrator or "self" and "other" or co-players, people of the player environment or game environment

entities. The “reading” of these digital game play narratives can benefit from the study of Bakhtin’s dialogic theory.

Player’s narratives can be seen in parallel with Bakhtin’s interpretations of the narrative in the novel. More specifically, with focus on literary genres, in his essay “*Epic and the Novel*” Bakhtin (1981) suggested that the novel is the only genre that appears to “develop before our eyes”. Furthermore, contrary to other literary genres, Bakhtin supported that the novel is younger than writing, thus, it is open to other forms of perception, like the mute perception of reading. The above reasoning on the novel could be useful in my argumentation on digital games. Effectively, seeking possible associations between Bakhtin’s novel and present-day digital games, I could identify some similarities: First, all digital games are of an ongoing nature (Salen & Zimmerman, 2003; Juul, 2012). They are not fixed. On the contrary, they continue to develop before the eyes of the player(s). Even more, they are developed by the player(s) himself/themselves during the gameplay. Second, digital games as new, computer-based media also favor new forms of perception. As an example, ergodic literature (Aarseth, 1997) constitutes a new-cybertextual process for reading digital games.

Nonetheless, the narrative in the novel is distinct from the narrative in the digital game. In broad outline, the narrative of the novel is regulated by stylistic norms. It is of recognizable literary value and aesthetic appeal (Prince, 2003). Regarding digital games, the infamous ludology versus narratology debate discussed in the previous chapter, led to the conclusion that although digital games may contain narratives, they are not considered

to possess an equal degree of narrativity (Ryan 2001). Thus, in the case of many online multiplayer games, narrative advancement acquires free-form characteristics. This type of game narrative is highly shaped by the player(s) decisions. As expected, in this case the game narrative literary value or aesthetic appeal remain questionable.

As mentioned earlier, the theory of dialogism studies the relation between two entities occupying different spaces simultaneously. Dialogism considers two different points of views that could be rephrased as two different perceptions: the perception of “self” and the perception of “other”. These two point-of-views are related to the context and the wider social influences on these entities. Their interactions take the form of a continuum of meanings that sometimes converge and other times diverge. To access these meanings Bakhtin suggested to study further the complexity of the social system to which the entities appertain. Thus, meaning-making may be considered relating to different levels and instances that affect subjects’ utterances.

Players’ different perspectives are expressed through utterances. According to Bakhtin an utterance does not form the speaker’s totally free choice, because it results from a precedent utterance. Given that an utterance is considered to respond to another utterance, it is largely regulated by social norms and relations. This applies to children players’ utterances during game play, where the game context determines to a great extent the footing of the discussion. Hence, in children players’ discussions, a great deal of what is being said is not expressed in detail. It is considered common for all the parties involved in the conversation. In addition, being socially directed, utterances can be placed at the

limit of what is said and what is not said (Bakhtin, 1981; Holquist, 1990). Thus, in a conversation between players some things may remain unsaid, either because of what is considered a common ground (the choice of a certain kind of weapon that is considered basic for a *Fortnite* player), or because of what a speaker chooses not to express, according to the social norms that he or she follows (a co-player's aggressive behavior remains unanswered). Another aspect that characterizes utterances is intonation, like rising or falling one's voice to communicate different meanings. In "*Dialogism: Bakhtin and His World*" (1990) Michael Holquist notes that speakers' intonation tends to construct the co-speaker's portrait, carrying objective ways of addressing to someone, in the form of recurring tonic patterns. In this sense, utterances lack objectivity. They contain a critical eye on the co-speaker. Similarly, in players' discussions, the way they address each other reveals aspects of their interpersonal relations, as well as their critical eye on their co-players and their perspectives.

Thus, game play could be interpreted as forms of dialogic interactions between players' voices, reflecting their existence as "self" or "other" in multiple contexts, the real-life contexts and the fictional contexts of the game world. In digital games, a plethora of dialogic relations are discerned among players. Departing from gameplay, these relations extend to many aspects of the players' everyday life. In the case of children players, dialogic relations extend to various children's contexts like home, extended family, school, neighborhood and extracurricular activities. Effectively, during game play, children players engage in dialogic relations in various ways. On the one hand, they may become

involved either as game players operating in the context of the digital game, but also maintaining overt connections to their life beyond the game itself. On the other hand, they may participate through the lenses of the game characters or avatars, focusing on their journey in the game space and having little connections to their real life. Children's players' engagement with digital games may also take a wide variety of forms like an online gaming community member, a casual player, a frequent gamer or an observer, to name a few. According to Marjanovic - Shane (2011) play should overcome two “pervasive dichotomies” that relate children’s play either to a “transformative developmental” practice leading to adulthood, or to a consideration of play as a frivolous, non-productive activity. Moreover, Marjanovic - Shane (2011) emphasizes on the quality of play not only to depict the child player’s social circumstances, but also his/her thoughts and emotions. In line with Bakhtin’s dialogic relation of “self” and “other”, Marjanovic-Shane (2011) has considered play as “a strategy for creating ontologically significant and meaningful events” in the life of a child.

Dialogism is considered to inform play with children’s social circumstances (Marjanovic – Shane, 2011). In digital games, Bakhtin’s concept of the chronotope has been considered by Lemke (2014, p.49) a “promising conceptual approach” to “mediate culturally meaningful activities”. Chronotope has also been selected by Barbosa Lima (2016) as the main analytical framework to investigate the creation of narratives in Role Playing Games by emphasizing on the time and space elements.

In my study of children as digital game players' interactions I focus on four Bakhtin dialogic concepts: polyphony, heteroglossia, chronotope and transgression. These concepts were selected because they allow a thorough study of children's interactive narratives through the lens of dialogic theory, as they revolve around common parameters of digital game-based narratives and the narratives studied by Bakhtin. More specifically, children's interaction with the digital game environment provides useful insights into the concepts of heteroglossia and polyphony, as it focuses on the players' utterances and looks for reflections of children's multiple social experiences (Aris' use of game slang words in episode 24, chapter 6), or simultaneous points of views in their discourses (Aris' and Apostolos' speech in episode 26, chapter 6). Similarly, the study of digital game chronotopes and cases of transgression put forward interesting findings on players' experience in relation to the game time and space (Noah and Vicky in episode 5, chapter 6), as well as the perception of "self" and "other" (Aris and Notis in episode 22, chapter 6).

Thus, digital games are studied as environments that provide many representations of time and space. Being a form of new media, digital games favor the use of innumerable digital copies (Manovich, 2001). In this sense, digital games can be seen as simulacra, a postmodernist notion relating to a copy that appears to be without the original and ends up becoming truth in its own right (Baudrillard, 1988). An example of a simulacrum game world appears in *Fortnite*. In this online survival game, players drop on an island in order to survive. No matter how many players play online, or how many times they drop in, at

the beginning of the game play, the island appears to be the same. They all deal with innumerable simulacra of the *Fortnite* island (see episode 25 in chapter 6). Effectively, during game play the player is given access to a game world simulacrum and is given the opportunity to make it his or her own. In online multiplayer games, players' simultaneous existence in the game space results in the creation of multiple individual game worlds that tend to meet in order to form the game world whole. Player interactions enable them to complement each other's view of the game play.

In Figure 3.2 an example of players' coping with the four dialogic concepts in *Fortnite* multiplayer online game is provided. In the case of Figure 3.2 the game is played by two players. On the screen each player sees the game world, but from his own viewpoint, or game chronotope. Both player avatars are located in "Retail Row", also indicated on the game map, and share the game time clock, which is also indicated on screen. Even though both players see themselves on their screens, each one sees himself in a different way. With focus on what the other player may see in his own screen, we suppose that he is able to see the front of our player, his posture, as well as the indication sign above his head. Although they are both located in the same game world, facing one another allows each of them to see a different part of the scenery. As expected, a slight movement by any of the two players will bring modifications to both players' views and reactions during game play. Regarding the avatars' faces, as in real life, players cannot see their own faces, except from the game space, called "The lobby", which serves as the game play initial phase. The two players are related in multiple ways, marked by complex dialogic relations. For example,

considering what a player may think when he sees another player in a game world for the first time, it has been argued that physical appearance plays an essential role (Steinkuehler, 2004). Thus, looking at each other's avatar, players recognize the types of guns, characters, outfits and accessories. Offensive or defensive posture forms another element that communicates alliance and/or hostility. Besides, in multiplayer online games like *Fortnite*, players who are acquainted engage in conversations during game play. These conversations abound with players' narratives of their social experiences and gameplay situations that denote heteroglossia and polyphony. Effectively, in cases of teamwork, in order to win the game, players' "self" and "other" tend to identify, forming a single powerful group of allies. In this case players' utterances form recurring patterns that culminate in either expression of triumph or disappointment and even hostility.

Regarding transgression, the dialogic relation of "self" and "other" is also apparent in the digital game chronotopes. Effectively, children's interactive narratives provide us with clues of space and time integration during game play. In their narratives we can detect the coexistence of "self" and "other". Thus, as already mentioned, at the beginning of the game play children often ask one another questions like "Where are you?", meaning, in which part of the game world are you located, in order to communicate a game strategy and make their own chronotopes meet. Transgression results in a fuller experience of a situation. In the context of transgression, an attempt is made to synthesize the perspectives of two individuals in dialogue. Similarly to other cases of narratives, in the case of digital games transgression involves the synthesis of players' chronotopes.



Figure 3-2: An example of dialogism in Fortnite

Bakhtin’s concept of polyphony or “multi-voicedness” (Holquist, 1990), refers to the collective quality of an individual utterance to depict the subject’s reality. Respectively, in online multiplayer games, every single player’s voice while talking to other players contributes to the game polyphony and focuses on the “inner dialogue” between each one of these voices. According to Bakhtin, heteroglossia refers to “other-languagedness” and is affected by the individuals’ social contexts. In digital games heteroglossia is marked by the presence of players’ variety of interests, thus a diversity of voices that reflect society’s diversity. Consequently, heteroglossia may reflect voices of the player’s age group tendencies, voices marking the player’s family habits and traditions, voices of dominance

etc. In the case of children players, their real-life contexts feed their speech heteroglossia and mark their meaning-making. It should be noted that all these voices of heteroglossia are not distinct. Of blurred boundaries, they are either having a dialogue or fighting for dominance.

In conclusion, based on Bakhtin's dialogism theory, this thesis also encompasses the elements of polyphony, heteroglossia, chronotope and transgression in the study of children's online gameplay. To this respect, a dialogic analysis of children's gameplay lays emphasis on players' intricate relations between "self" and "other", existing and interacting in the game world.

3.5 Conclusionary points

The young players' interactions have strong social underpinnings, expressed through their narratives. In search for the methodological tools to study their interactions, two theories that focus on the use of language and enable an ethnographic enquiry on children were selected.

Goffman's theory is based on the use of frames for the interpretation of events and human experiences. Goffman also studied board game players' interactions and claimed that games provide frames of strong social interaction value. Frame construction in digital games relates to cases of players' difficulties in treating border cases of gaming according to the magic circle metaphor (Deterding, 2009). Goffman's theory has been also applied to online multiplayer games to analyze player involvement (Linderoth, 2012; Calleja, 2007;

Puente Bienvenido, 2019). Focusing on the multiple children's interactions during gameplay, my approach deploys the focus on important elements that can be traced in digital game frames such as rituals, image of "self" and relations to others. Interactional Sociolinguistics qualitative interpretative approach and Mayra's gameplay experience model (2007) contributions to frame analysis of digital gameplay interactions are also considered. Frame analysis in children – players' interactions is assisted by the creation of a children's drawings analysis scheme, focusing on the analysis of children's drawings on different game frames. In this research study, frames contribute in the understanding of online game interactions which the magic circle metaphor cannot explain. Frames also serve as a useful tool to explain children's gameplay choices as they seek connections between children's in game contexts and real-world contexts.

Bakhtin's dialogical theory studies the relation between two entities occupying different spaces simultaneously. It considers two perceptions, "self" and "other", that are related to the subjects' social contexts and are expressed mainly through utterances and form narratives. Therefore, dialogism focuses on a chain of utterances, one responding to another. Regarding Bakhtin's dialogism theory applications to digital games the chronotope has been a useful concept in the investigation of gameplay narrative meanings (Barbosa Lima, 2016). Narrative constitutes a necessary condition. Thus, in digital games dialogism is par excellence expressed through player interactions, on the basis of exchanging player utterances during gameplay. In this chapter four basic elements of dialogism in online multiplayer games are suggested: heteroglossia, polyphony chronotope

and transgression. The use of these four elements of dialogism contributes to the analysis of children's interactive narratives, on the basis of expressing their inner voices and considering their coexistence with their co-players. Their game experience is understood as the unity of time and space.

To synthesize, frames and dialogism concern the analysis of children as digital game players's interactions on the basis of their language choices. They have common features (focus on "self" and "other" and of the player's utterance). They differ in their treatment of the concept of interaction. While for frames theory, interaction is linked to the players' management of different social contexts, for dialogism theory, interaction is linked to the dialogue between the players. In both theories, the narrative element serves as a "vehicle" for the analysis of player interactions.

These two theories can be used as methodological perspectives for the ethnographic approach to digital play (Goffman frames), and the focus on the utterances that take place as episodes of interactive narratives produced by children as digital game players (Bakhtin dialogism). More specifically, frame theory helps us explore habits, rituals, players' relations through "children's' interactive narratives". Similarly, dialogism helps us delve into children's utterances as captured in their narratives related to the above-mentioned frames.

CHAPTER 4

Methodological Considerations for Data Collection and Analysis

This chapter deals with the methodology of the present study. It comprises the description of the research problem and the development of the research approach. It also presents information concerning the research participants and research design. Finally, it considers trustworthiness and ethical issues.

4.1 The research problem

As seen in the previous chapters, children's digital game play involves two key elements: interaction and narrative. Interaction constitutes a predominant element in digital games, connected with the players' actions in the game world, whereas narrative depicts players' thoughts throughout their game experience. Thus, the research problem anticipates how the elements of the narrative and the interactive are related in children's gameplay, so as to clarify the nature and the particularities of this correlation.

Specifically, the review undertaken in chapter one allowed to ask two questions. The first question concerned the contribution of narrative in the understanding of children as digital game players interactions. With regard to this question, literature review suggested that by design, digital games create compelling player experiences, which are interpreted by the players through the use of narratives. However, so far, little research has been done with regard to the narratives of children – players of digital games. The second question was about exploring children - players' interactions and raised the issue of

children as digital game players' contexts. This question involved the formation of children's gameplay experience within the game world. It also acknowledged research findings supporting that there is no perfect separation between the digital game boundaries and the real-world boundaries.

Then, in chapter two the literature review indicated the research problem according to the following remark: Game interactions fuel children's narratives. Specifically, the narratives resulting from the interactions among children were introduced as "children's interactive narratives". And, in chapter three literature review indicated that game interactions are social interactions. Thus, it was decided to explore the narrative-interactive relation in children's gameplay through the methodological perspectives of Goffman's frame theory which stresses on social interaction and Bakhtin's dialogical theory which stresses on narrative. The two theories were considered methodological tools in the study of children's interactive narratives, provided that they focus on the use of language and enable an ethnographic enquiry on children.

In this thesis the methodology of frames was based on the analysis of children as digital game players' interactions on the basis of frames like the game rituals, the image of the player's "self" and relations to others. Frames were also used in the content analysis of children as digital game players' drawings, based on the argument that children as digital game players depict different game frames according to four main digital game elements, also indicated by Schell in his game design framework "elemental tetrad" (2008), aesthetics, story, game mechanics, technology. Specifically, the analysis of children's

drawings focused on tracing the game rituals in children's drawings through the depiction of the game rules and game sequence. The use of frames in the analysis of children's oral interactive narratives and drawings assisted to explain children's gameplay choices, considering not only the game contexts, but also children's real-world contexts.

Furthermore, the analysis of children's interactive narratives benefited from the methodology of dialogism on the basis of four Bakhtinian concepts: heteroglossia, polyphony, chronotope and transgression. The above concepts assisted to analyse children's game experiences by focusing on children's inner voices and on their expression, while in coexistence with their co-players during game play. Hence, the methodology of dialogism assisted to discuss children as digital game players' utterances in a dialogue between the players' "self" and "other" and the multiple ways this relation is communicated.

4.2 The research approach

The research study falls into the qualitative research spectrum. This choice was the result of the research problem and the related research approaches on the study of children's gameplay interactions. According to James & Prout (1990) ethnography is a very useful methodology to study childhood, because, when compared to survey studies, it "allows children a more direct voice". Based mainly on participatory techniques, ethnography enhanced a shift in the study of children in the late 1980s. Thus, from "objects of concern" children became "active participants", marking "a commitment to conduct research *with* children rather than *on* them" (Christensen & James 2000, 2008). Hence, the challenge of

the researcher lies in “creating space” for the children to express themselves and be valued (O’Kane 2000). Researching children entails a series of methodological, ethical and epistemological issues (Christensen & James 2000, 2008; James & Prout, 1990). However, as Christensen & James (2008) suggest, research with children doesn’t need to adopt different methods. Rather, researchers should focus on practices that consider children as social actors and relate to their everyday lives and concerns.

In my research I focused on children - players’ interactions and narratives. The choice of the frame theory and the dialogism theory as the main tools to interpret children’s interactions and narratives, require thorough observation of their gameplay and game practices. The need for direct access to the practices of the children groups, in order to study their interactions within their social contexts indicated ethnographic research as a suitable qualitative method.

The data collection methods used were participant observation, interviews and drawings as stimulated recall. According to Marshall & Rossman (1989) observation is “the systematic description of events, behaviors and artifacts in the social setting chosen for study” (p.79). Providing a metaphor for participant observation Erlandson et al (1993) saw observation as a “written photograph” of a situation under study. With focus to participant observation in educational research, Ahola & Lucas (1981) relied on Becker and Geer definition of participant observation (1969, p.322): *“By participant observation we mean that method in which the observer participates in the daily life of the people under study, either openly in the role of researcher or covertly in some disguised role, observing*

things that happen, listening to what is said, and questioning people, over some length of time”.

Wilson (1977) stipulated that participant observation constitutes an ideal tool to study human behavior because it enables the researcher to acknowledge the context in which this behavior occurs. Additionally, Wilson claimed that the assumption that “*what people say and do is consciously and unconsciously shaped by the social situation*” (1977, p. 254), therefore provides a stepping stone for ethnographic methodologies. Similarly, focusing on educational contexts Ahola and Lucas (1981) claimed that the participant observer is subject to two types of “social forces” that derive from pre-determined environmental factors and social interactions. Consequently, from an insider’s perspective, the researcher is required to understand the conditions under which he collects his data and adjust his role accordingly.

Back to Wilson’s (1977) reasoning, participant observation assumes that individuals’ behavior is determined by “meaning structures” (1977, p. 254). According to Wilson participant observation aims at exploring these meaning structures and their connection to participants’ behavior. Wilson stressed that participant observation is an attractive choice to study human behavior because it relates to its’ ability to host latent meanings. He claimed that in some cases subjects’ perspectives are not articulated, therefore they are not considered observable facts in quantitative research schemes. Effectively, in my research children players often faced difficulties in expressing in words their thoughts and feelings. For this reason, participant observation had been useful in

collecting and analyzing these particular data. Furthermore, Kawulich (2005) and Schmuck (1997) mention that participant observation techniques enable researchers to keep track of issues that are not easily grasped like participants' interaction patterns and special terminology that is used among participants. Effectively, interaction patterns and special terminology had been widely observed among the children players in this research. Finally, observation techniques are also useful as an additional source of information, for cases that are mentioned in interviews and for descriptions of doubtful accuracy (Kawulich, 2005; Marshall and Rossman, 1989). Effectively, in my research, participant observation noted different children's behaviors regarding their own participation that could be considered of "doubtful accuracy". These behaviors were linked to the fact that children knew that they were being recorded and felt that they were being assessed. As a result, in the school workshop sessions, some children did their utmost to look cooperative, reminding of what a "good student" is expected to be. Similarly, in the after-school sessions some children tried hard to come across as experienced game players, and kept asking the researcher if they were being recorded (Poïviώτη, 2018). This indicated that according to my role as the researcher, I should prevent children from losing their spontaneity. As a result, I tried to put them at ease and let children know that they were being recorded sporadically. Consequently, although detailed participant observations started from the very beginning of the sessions, in most cases recordings started when children felt relaxed, not concerned about "being recorded".

Using ethnographic methods, participant observation involves an extroverted approach to others and focuses on instances that provide useful information on participants' interactions. To this, the observer is required to maintain a non-judgmental, active and objective look. In an ethnographic description of the observer's manifold role, Van Maanen (1988) specified participant observer as "*part spy, part voyeur, part fun, part member*". According to Wilson (1977, p.250) to interpret human behavior the researcher "*must develop a dynamic tension between the subjective role of participant and the role of the observer so that he is neither one entirely*". However, in participant observation thorough decisions concern the exact role of the observer in the research setting. To this end, Ahola & Lucas (1981) argued that the term participant observation acquires a double meaning, that of participant and observation. They suggested placing different observation cases on a "participation-observation continuum". To support their argument, they cited Lutz & Iannaccone (1969) description of three roles of the participant observer, which provided an accurate depiction of the participant as an observer, the observer as a limited participant and the observer as a non-participant and applied the above observer role distinction to their own school settings research. Effectively, choices regarding the researcher involvement in the community under study relate to researcher bias and subjectivity issues, giving rise to questions of ethics, confidentiality and restrictions in the collection of information (Kawulich, 2005; Ahola & Lucas, 1981).

In my research, I opted for a non-participant role, observing children's gameplay interactions, without participating in the gameplay (Lutz & Iannaccone, 1969). In

particular, during gameplay activities I maintained a discrete presence, in order not to intervene in children's interactions. The majority of field notes were taken publicly on the spot, to ensure a more complete depiction of the situation under study, as well as an indication of transparency regarding my research aims. My work was closely related to the research settings: A primary consideration had been to conduct the research in an ethical manner, by informing all participants, (students, school community and parents) of the objectives and the methodology of the research. For research in the school context (Figure 4.1), developing relationships with the participants had been a challenge. To this, after gaining permission and selecting key informants, I had to familiarize myself in the school environment and learn the social rules in order to become known in the community (Kawulich, 2005; DeMunck and Sobo, 1998). The subsequent rapport-building with the students (Kawulich, 2005) had been challenging. I managed to fight the initial exclusion from some students (refusal to answer questions, talking out of ear shot) and established trustworthiness and acceptance (LeCompte & Schensul, 1999; Kawulich, 2005). Special care was taken in order to comply with the school rules and regulations as well as parents' desire to exclude from the game list the games of violence. Finally, anonymity of all participants was preserved. On the contrary, research in the after-school club had been less formal. Acceptance was established easily, even in the case of students that came from the school context.



Figure 4-1: Research Design: Phases and Time Periods.

Based solely on empirical data, grounded theory was chosen because it is useful for exploring new areas of research, where the existing theoretical approach is unclear (Glaser and Strauss, 1967). Grounded theory was also chosen because it considers knowledge as socially produced (Charmaz, 2012). However, to construct my theory I employed a set of data analysis and interpretative procedures (Glaser and Strauss, 1967; Chun Tie et al, 2019; Haig, 2007) in conjunction with concepts from Goffman and Bakhtin's theories like the image of “self” and the chronotope. The collecting qualitative data was followed by three iterative phases of coding, based on children’s interactive narratives. Initial or open coding led to the development of categories of information, intermediate or axial coding led to the correlation of the above categories, and advanced or selective coding related to developing, interconnecting categories of information and finally producing a set of theoretical propositions. During the advanced coding, theoretical sampling led to narrowing down the number of the old participants and adding new ones (Draucker et al, 2007). This was pursued in phase two of the research, providing relevant information and aiding the evolving theory, grounded on data.

In my research design, the choice of participant observation as an ethnographic technique resulted from the need to exploit children's interactions regarding digital games. A mixture of additional data methods was selected in having impact on multiple contexts: the school or the after-school activity context, the digital game context, players' individual social contexts like the player's family, the player's online appearance etc.

During my research I noticed radical changes in digital game technologies which greatly affected children's preferences and gameplay habits. A typical example had been the wide popularity of *Fortnite*, an online multiplayer game which attracted the vast majority of the phase two participants. Regardless of their low familiarity with online multiplayer games, children embraced the "Fortnite trend". However, the use of *Fortnite* in phase two raised questions concerning how reliable data collection could be ensured, regarding interviews and the recordings of participant observation in the case of multiple children players, who may not share the same physical space, but can meet in the virtual game space. Furthermore, in the case of online multiplayer games, gameplay becomes multidimensional and socially promoted (Steinkuehler, 2004; Ποϊνιώτη, 2018). As a result, an online multiplayer game can be played solo or multiplayer, it can host vivid conversations among players, it can even provide a "neutral ground" (Oldenburg, 1999) or a sandbox, where players have little or no obligations. Multidimensionality of online multiplayer games triggered concern over the collection of adequate and reliable data.

Previous research on children players in an after-school video game club relates to Walkerdine's (2007) research on children gender and video games. However, in

Walkerdine's research children shared the same physical space, playing console video games in twos or threes. Coping with players' multiple physical locations during gameplay has been an engaging issue for game research. In her doctoral thesis Steinkuehler (2004) examined the role of discourse in virtual social interaction and written game-related narratives among adult players. In 2008-2011, in the head of the Pop Cosmo Research Team she focused her research on teenage boys, with the use of mixed methods on individual and group cognition in the context of an after-school program (Steinkuehler, 2006). In the Pop Cosmo workshop, players met monthly in a face-to-face setting and online during regular collaborative gaming. During collaborative gaming researchers and participants joined, in order to gather participant observation data. From another standpoint, to analyze spatial relationships during a Massively Multiplayer Online Role-Playing Game session, Ποϊνιώτη (2018) applied a new qualitative research method, game elicitation. This method allowed for remote video interviews with players and provided useful data on the visuality of adult players in both spaces, in room and in game.

First mentioned by Benjamin Bloom (1953) as a method to bring to mind memories, stimulated recall aims to “support the participant to rebuild the original situation in their mind as authentically as possible, in order for him or her to be able to analyze their actions and thought processes during the actions” (Pitkannen, 2015, p. 119). It is specified as “a subset of introspective research methods in which the researcher accesses the informants’ own interpretations of his or her mental processes” (Lyle, 2003 p. 861). Stimulated recall as a research method involves rebuilding the original situation through a stimulus which

triggers a series of thought processes and actions on a certain occurrence. With regard to research on children, stimulated recall has been used in the context of education (Consuegra et al, 2016; Ankney, 2016; Clarke, 2003; Pirie, 1996; Gass and Mackey, 2000; Fox-Turnbull, 2011; Theobald, 2008). In game research stimulated recall and other similar techniques have been used like cued-recall debrief methodology to study user affect while playing digital games (Bentley et al, 2005) or the possibility for players to act as co-researchers (Jorgensen, 2011). Stimulated recall has also been used to study the impact of digital games on language learning (Chik, 2014) and exploit the factors that influence video game learning (Schamroth Abrams, 2010). Finally, stimulated recall has been used to focus on game mechanics and the empirical skill chain of a game (Horn et al, 2017) and analyze the role of space in Massively Multiplayer Online Role-Playing Games (Poïνιώτη, 2018).

Using stimulated recall with children and play, Pitkanen (2015) saw a challenging connection between the immersive nature of games and the recalling of an original game situation. He stipulated that stimulated recall can be a valuable tool to investigate the reasons behind players' actions during gameplay. His reasoning was based on the game being "a specific system" of rules, goals and behaviors that the researcher should consider along with the idioculture of the gamer's society (Fine, 1979). Another argument for stimulated recall in game research was developed by Horn et al (2017, pp. 281), who claimed that stimulated recall permits "a more natural setting while also cueing fresh memories" and "reducing false memories and post-rationalization". The use of drawings in stimulated recall was based on research findings that drawings serve as flexible tools to

access the views of children and can be used in combination with other data collection methods (Merriman & Guerin, 2006). Effectively, children's drawings were considered a form of visual narratives of their gameplay, which, along with interviews, emphasized on children self-expression.

Focusing on children's oral and visual narratives of their gameplay experiences, in this study, stimulated recall was combined with other data collection methods in order to achieve triangulation of sources (Patton, 1990). Stimulated recall was used during the second session of phase one of the research. In this session the child was asked to choose to play a game from a list of games that I had previously prepared. After the gameplay, I prompted the child to make a drawing to show how the game is played ("Make a drawing of the game so I can understand how you played it"). Recalling how the child played the game aimed to gather information on the game mechanics. As mentioned in chapter three, in my research I attempt to establish a connection between Goffman's concept of rituals (1961b, 1967) and Schell's game mechanics as a fundamental element of digital games (2008). Thus, each drawing was considered a snapshot of a digital game, which provided the child's view of a game frame and the game rituals through sketches of the game buttons, player moves, symbols, game objects or indications of the game sequence, that form depictions of game mechanics. The drawing completed, it was followed by a semi-structured interview where the child presented and commented on his or her drawing. Specifically, in my study digital game playing was used as a stimulus in facilitating children's recall of information and experiences that were then retrieved and captured

through the drawings and the interviews. To ensure the child's short-term memory, the drawing and the interview were introduced in the same session, right after the gameplay.

4.3 Children's contexts and gameplay

A general assumption is that children grow up and develop in a complex system of environments. According to Bronfenbrenner's Ecological Systems Theory (1977), children are affected by a system of five interrelated environments, each one contained within the next. Bronfenbrenner's model could be depicted as a system of concentric circles, with the child at the center. The circle which is closer to the child is the microsystem, indicating the child's immediate environment like parents, siblings, teachers and peers. The second level is the mesosystem, which comprises the interactions of the persons in the microsystem, like parents' communication with the school teacher. The exosystem encompasses social structures that influence the child indirectly, like mass media. The fourth level, the macrosystem considers elements of the established society, like poverty or status. Finally, the chronosystem considers the environmental changes in a child's life, like starting school or moving to a new house. Based on Bronfenbrenner's Ecological Systems Theory, Almy & Genishi (1979) suggested that studying children in groups relates to a series of social contexts that encompass home, extended family, family day care or playground, school or center, church or youth service group, social or ethnic group. Applying Bronfenbrenner's Ecological Systems Theory to children's digital gameplay, Yap, Yap & Yap (2015) suggested that the microsystem includes the children's use of the different game devices

that affect the gameplay experience. The mesosystem concerns whether the children play at home or at school, whereas the exosystem regards the other players and their behavior towards the child player. The macrosystem considers the larger cultural context that can affect a group of players and the chronosystem encompasses the time-space dimension over the player's progression in the game.

Although Bronfenbrenner (1977) and Almy & Genishi (1979) works focused on American children before the beginning of digital games, encompassing the existence of many culturally diverse groups that affect children's experiences, there are two important remarks that we should keep: First, children exist in interconnected environments or contexts. And second, these contexts revolve around the child and his/her home environment. The above remarks are in accordance with the outcomes of the "Digital Youth Project" on media ecologies (Ito et al, 2009). Specifically, with focus on digital media, in the "Digital Youth Project" the team of investigators adopted an ethnographic approach to "understand how media and technology supported by Internet and mobile networks become meaningful to people in their everyday lives". Considering "childhood as a socially constructed, historically variable and contested category" (Ito et al, 2009), the researchers sought for patterns in young people social practices that related to the construction of a new media ecology in youth lives. The metaphor of ecology was used to highlight the dynamic interrelation of the existing structural conditions with technologies in young people's everyday life. The project aimed at youth from different areas of America (urban, suburban and rural areas) in order to explore if different social structures

and economic or social conditions reflect on youth media ecologies. The project's main areas of study were young people's home and family, school, after-school programs and spaces and media environments.

With regard to the contexts that affect players' game experiences, Ermi and Mayra (2005) identified the player's immediate personal and social contexts, contexts provided by the earlier forms of game and play, contexts for digital games production, as well as the wider context of social norms and values. Ermi and Mayra agree that the contexts which affect players' game experiences are interrelated. They also stress that these contexts carry historical and situational elements that shape the gameplay.

In an effort to distinguish the possible contexts in which nowadays' children spend their time, I worked on the basis of Bronfenbrenner's theory (1977), as well as Ito's main findings on youth social contexts (Ito et al, 2009). In addition, I reflected on Qvortrup (2000) considerations on the role of childhood in ethnographic research. According to Qvortrup, childhood should be considered as a "variable", determined by a series of parameters relating to the society's characteristics and instances. Thus, ethnographic research on children and games should regard the changing nature of childhood. However, Greek bibliography on children and digital games remains very limited. According to a study carried by Aslanidou & Menexes (2008) in four Greek cities, regarding the patterns of internet use of Greek youth aged 12-18, the internet is connected to social and economic stratification. Conforming to the above study, children having access to the internet in their everyday life come from families with a higher socioeconomic background and live in

urban and semi urban areas. Although not being adequately captured by research yet, the rapid developments in the use of digital technologies in distance education brought about by the COVID pandemic in Greece (Nikolopoulou, 2022; Kourti et al, 2021; Σιδηροπούλου, 2021), potentially overturn Aslanidou and Menexes conclusions, and expand the scope of children's access to digital games.

Thus, the 21st century technology advancements and changes in the conditions of everyday life of Greek children aged 7-12 necessitate radical changes in children's social contexts. Consequently, the possible contexts for Greek children players' living in large urban centers such as Athens, (Figure 4.2) maintain the microsystem and the mesosystem contexts, like Home and Extended family in the center, as the most influential on their development (Bronfenbrenner, 1977). However, the proposed possible contexts diverge from Almy & Genishi suggestions, regarding the role of the school, the neighborhood, the extracurricular activities. Furthermore, the context of digital environments and online communities that has emerged, influences to a great extent children's education and leisure. The above typology aligns with Mayra's Contextual Experience Model (2007) typology of player's contexts, presented in chapter 3. Specifically, home and extended family refer to what Mayra (2007) calls the player's "immediate personal contexts". Accordingly, school, neighborhood, extracurricular activities, as well as digital environments and communities pertain to what Mayra calls "immediate social contexts". The above context typology (Figure 4.2) is useful in data analysis, as it helps us detect how children relate digital

gameplay to the real world. Moreover, it assists in distinguishing the social contexts that are reflected in children's interactive narratives.

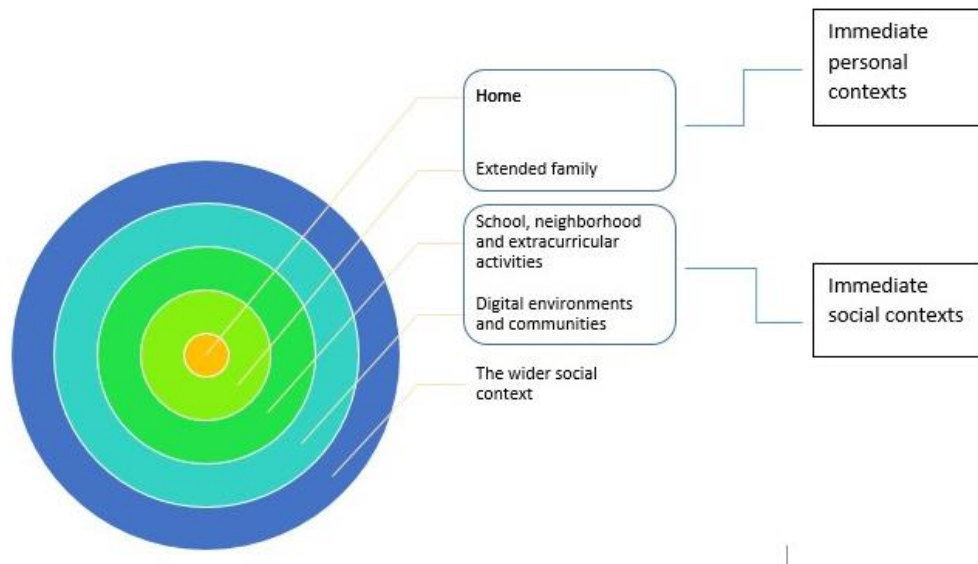


Figure 4-2: Children players' possible contexts (based on Bronfenbrenner, 1977 and Mayra, 2007).

The rationale behind my choice to conduct ethnographic survey in two different settings, the school setting and at home, deals with the contexts that are at the heart of children as digital game players' possible contexts (Figure 4.2), therefore can provide more reliable data on children players' interactions. On the contrary, places like internet cafes were not selected, because they belong to the more peripheral category of digital environments and communities. However, the interrelation of all contexts contributes to a

thorough depiction of the conditions that affect children's gameplay interactions. Furthermore, given that digital games nest a wide variety of frames (see chapter 3), I will examine some gameplay episodes where children, through their interactive narratives, cope with frames in order to structure their experiences.

4.4 The research participants: Playing games in the school workshop and in an after-school activity

In qualitative research, participant selection can be made purposefully, on the basis of participants' capability to enhance understanding of the subject (Wilson, 1977; Ahola & Lucas, 1981). Particularly, in my research, participant selection was expected to enhance the study of players' social interactions during gameplay, the existence of socio-cultural elements and their expression through players' narratives. Both phases of my research focused on children game players from the Athens urban area, with family socioeconomic support that are familiar with digital technologies. Children participants were selected according to their age, their willingness to participate in the research and their gameplay preferences. The research involved 30 children aged 7-12 years old (12 years old was the age of the eldest participants at the completion of phase two). Specifically, phase one comprised two participant selections, which resulted in two research groups: The school workshop research group (11 children aged 8 and 9) (Tony, Stella, Theo, Stefanos, Myrsini, Jakob, Rania, Kostis, Manos, Dimitris, Dionisis) was selected by the school staff, after

communication with the researcher. The after-school-activity research group (11 children aged 7-12) (Apostolos, Aris, Vicky, Noah, Pavlos, Markos, Maria, Petros, Alex, Arionas, George) was selected by me. In phase two both research groups were merged (Apostolos, Aris, Pavlos, Manos, Petros, Jakob, Maria, Myrsini, Markos, Arionas, Alex, Vicky, Noah, Dimitris) and further enhanced with newcomers (Christos, Manolis, Thanos, Jimmy, Pantelis, Notis, Nick, Fotis), to reach the number of 22 children, aged 8-12. In phase two, participant selection was made according to criteria relating to children's willingness to cooperate, game preferences, competency level and availability. The total number of children participating in the two phases of the research was 30. In all cases, parental consent was sought. It should be noted that the actual names of the children who participated in the research are not mentioned. Therefore, assumed names were assigned to all research participants.

Out of 30 children participants, 25 were boys and 5 were girls. Although all participants were familiar with digital technologies, their level of familiarity with digital games varied. Thus, there were skilled players like Noah, Aris, Vicky, Nick and Notis. In addition, Manos, Pavlos, Maria, Apostolos, Tony, Theo, Alex, Pantelis, Kostis, Thanos, George, Myrsini, Stefanos, Stella, Fotis and Dimitris were considered average players because they had some familiarity with digital games. Finally, Manolis, Christos, Jimmy, Petros, Arionas, Markos, Jakob, Rania and Dionisis had little game experience when they joined the research groups. Some boy participants had already formed friendships with other participants (Tony and Theo, Dionisis and Stefanos, Aris and Notis, Manolis and

Apostolos). These children often chose to play with their friends in twos. Other children formed friendships during the workshop or the home-based activity, which they maintained by choosing their new friends as co-players. This was the case of Christos and Fotis. The limited number of girl participants, did not provide us with a satisfactory amount of information. However, the three girls participating in the school workshop (Stella, Myrsini, Rania) decided to form a group, which continued throughout the meetings of the first phase of the research. Regarding the existence of family relations between the participants, Noah and Vicky were brother and sister. Similarly, Aris and Apostolos were brothers participating in the after-school activity, in both phases of the research. These children showed a preference for playing together.

In phase one the children played digital games in two different settings: a school workshop and an after-school home-based activity. The first research group concerned a school workshop on digital games. The choice of the private primary school was made according to criteria relating to the school openness to research projects and practices, as well as the availability of a school computer lab to host our sessions and pupils' familiarization with digital games. Children's play in the school computer lab followed the lab arrangement, designed for classroom use. Thirteen computers were arranged in a U-shape, facing the classroom walls. A central spot in the classroom overlooked children's screens. This arrangement supported teacher control and provided enough space to move around. However, there was a distance between the computers, promoting single play. Children were left to choose their seats freely. They were also encouraged to form pairs or

small groups in front of a computer, given that there was enough space. However, most of the children decided to sit separately and be able to use a computer per person. In some cases, children decided to sit near a friend or a classmate. Interestingly, although encouraged to do otherwise, after the first session children maintained the same seating arrangement. Specifically, in the first session some boys played in pairs but in the following sessions they decided to seat separately, close to their ex-pair. On the contrary, in the first session the three girls of the school group sat separately. In the following sessions all three girls decided to seat together in front of a computer. The girls maintained their seating arrangement in the following sessions. (see Appendix D). During the fourth session children were asked to do a seat rotation exercise in order move continuously and change seats.

Following the same session planning and game list, the second group of phase one was equally formed by 11 children aged 7-12. The four sessions took the form of an after-school home-based activity. However, the composition of the teams varied. In the after-school club I opted to work with multiple smaller teams, in order to better observe children's behavior. As a result, in each after-school session, two to five children participated. Teams were formed in flexibility. Overall, team formation was made according to existing friendly relations, shared interests between participants, as well as their availability to participate in the session. Sessions took place in the researcher's and participants' homes. Children worked on their own game devices and other devices provided by me. Each child attended at least four sessions in a time span of four weeks.

After-school club sessions took place in a relaxed atmosphere. Children felt comfortable and focused on their gameplay. This facilitated my observation tasks and produced fruitful results. Although taking place at children's homes, parental presence was limited to an initial briefing to consent on their children's participation. My role during the after-school club sessions provided me with more flexibility, given that I had the opportunity to decide on important elements of the workshop relating to participant selection and pairing, time management and space allocation. Rather, in the school workshop these elements were considered "fixed" and could not be changed. Effectively, in the two contexts time was used differently: Whereas in the school context time had been a restrictive factor, limiting children's playful disposition, in the after-school club participants had more time available. As a result, sessions lasted more and followed the game advancement. This reflected the children feeling happy with their participation in the club. Space equally affected children's behavior: At home children players felt at ease, easily immersed and thrilled by the gameplay. On the contrary, in the school premises children appeared restrained, needing more time to "enter" the game world. Accordingly, being able to use their own game devices was a facilitating factor towards my task.

In phase one, both research groups were given an initial game list that I had prepared, according to selection criteria related to the game content (non-violent games addressing to primary school children), as well as to the technical requirements (games that do not require installation and can be played on the school lab computers), and educational value of games (games that encourage critical thinking, visual memory and hand-eye

coordination). The initial game list comprised nineteen puzzle and adventure games (*Pandalife, Minecraft, Ice Age Village*, a selection of *Friv games*). However, as sessions proceeded, children suggested more games to play. More specifically, circulating a piece of writing suggesting games for next time, had been a popular ending of each session. Although their requests were not always met, this made children feel that they had a contributing role to the workshop and gently enhanced team spirit. As expected, this resulted in the gradual extension of our game list (*Subway Surfers, Fortnite, Fruit Ninja, Stardoll, Wii*) (see Appendix I).

The decision to include many digital games in the workshops of phase one was made in order to engage and maintain children participants' attention. However, this enhanced the complexity of the collected data. From the point of view of game space, players' experience of space during gameplay shapes their overall game involvement (Wolf, 2010). Effectively, differences in game spaces reflect on game interactivity. As seen earlier in chapter 2, there is diversity in representations of space and space navigation possibilities in digital games. Thus, players cope differently with three-dimensional games like *Fortnite* or *Minecraft* than with two-dimensional or not fully three-dimensional game spaces like *Subway surfers, Friv games* and other sports and puzzle games that were selected in our workshops. Similarly, players' efforts and movement in game navigable spaces is distinct. For example, in *Minecraft* the player can only see a fraction of the game space on screen. Therefore, navigation in *Minecraft* space involves the "creation" of a cognitive map in order for the player to find his/her way in the game world. In *Subway*

Surfers, there are important movement restrictions within the game space. Consequently, the player avatar can only move through a certain area of the game space area. In terms of players' cognitive efforts, however, the player is required to exercise similar skills with Minecraft like attention, memory and logical reasoning. As for *Friv* puzzle games, although they require little navigational ability, they also aim to develop the same cognitive skills.

To avoid further complexity in the analysis of the collected data, the selection of digital games was restricted to online single player games, with the exception of two games, *Wii* and *Fruit Ninja*. On one occasion *Minecraft*-Creative mode was played as a multiplayer game. In addition, the integration of two different contexts in the workshops, the school context and children's home, brought out the importance of the player's physical space, a factor which also influences young players' game experiences (Walkerdine, 2007). The data collected in the first phase of my research indicated episodes of children as digital game players' interactions, providing useful information on children's ways of structuring and interpreting their game experiences. However, restrictions regarding the first phase of the research (the choice of many single-player games, time and place limitations) made further study of game interactions a difficult task to achieve. As a result, the second phase of my research focused on the collection of more data regarding the exploration of children as digital game players' interactions. This was made possible by choosing *Fortnite*, a digital game that promoted online multi-player participation. This resulted in the players having the opportunity to externalize their experiences by having the same game as a reference point, and playing it in real time. Moreover, in the second phase of the research,

emphasis was laid on children's narratives as a means to express their game experiences. In addition, the choice of the after-school home-based activity added flexibility to the children's play, in terms of game duration, group composition and recording of children's interactions. As a result, during phase two, children players felt free to decide on the duration of the sessions as well as on the selection of their co-players. Specifically, in phase two research focused on a smaller number of children. The research group consisted of 14 children, originating from the two research groups of the first phase. Narrowing down the number of participants was decided in order to gain close familiarity and be able to delve into participants' habits and views on digital games. However, during phase two, 5 more children joined in, having expressed their will to participate because of their friendship with some of the research group children. During the second phase of the research children worked in pairs or in small groups. In this phase, all children played *Fortnite*. Sessions focused on free play, meeting and cooperating with others in the game space.

Of flexible participation, phase two sessions were organized in the form of an after-school, home-based activity, of a time-span of 31 months. The long duration of phase two was decided in order to provide the researcher with sufficient data regarding children's changing practices and habits on gameplay issues. The selection of the participants was made according to factors that relate to participants' openness for cooperation with the researcher and their peers, game interests, competency level, and time availability. Similarly, to phase one after-school club, parental consent was required for the child's participation in our sessions. Phase two started 3 months after the completion of phase one

and utilized its first findings. During phase two the researcher held two monthly sessions of different participant composition to provide that each child participated at least in 5 sessions.

4.5 Phase one: Interactions between the players and the game environment

As shown in Figure 4.1, phase one comprised two research groups, a school workshop and an after-school activity. The two research groups shared a common session planning and game list.

Regarding the first research group, access to school was given after sending a detailed research proposal comprising the description of the research project and the detailed activities to take place during the four weekly sessions (see Appendix III). These were followed by a discussion with the school principal. I was informed of the school rules that proscribed the installation of games on the school lab computers, or the use of children's own devices in the school premises. The above, along with the game selection criteria that were developed earlier in this chapter, resulted in restricting the range of games played in this phase of my research.

The participants of the school workshop were 11 primary school pupils aged 8 and 9. Coming from two different grades children did not have the sense of belonging to a group. Their choice was made after parents' response to the school call for participation in the project. Consequently, having to encourage bonding and team-building in only four sessions was a task made more difficult by children's expectations of their participation as

free time in school. The fact that our sessions took place during school hours affected their participation in the sense that gameplay was “imposed” on them: children were asked to start playing at a given time of their school timetable and, even worse, the session ended, they had to stop playing and go back to class without delay.

Before the first session I was able to conduct preliminary interviews with three of the school informatics teachers. These interviews provided me with useful information for my introduction to school life and particularly to the routines of the computer lab. According to the session planning, the first session aimed at creating a relationship between the researcher and the children, in order to work together in the project. It involved a semi-structured interview with each child, exploring introductory topics on the child's experiences on digital games, laying emphasis on “how” the child narrates his or her experiences. The child was asked to describe a digital game he/she preferred. Then, the child was asked to pinpoint any difficulties he/she had encountered while playing digital games. Reporting to his/her previous experience with games, the child was asked to highlight game features he/she found appealing. Finally, the child was asked to mention any digital games he/she didn't like.

During the second session the child was asked to play a game from the list suggested by the researcher as a stimulated recall. Shortly after gameplay a task was allocated to each child, asking him/her to make a drawing in order to show how the game is played. After the completion of the drawing, in a semi-structured interview the child described and commented on his/her drawing. This session aimed at clarifying how

children comprehend digital games and whether they interpret digital games according to their own cultural contexts.

The third session focused on game challenges. Children were asked to recognize and suggest ways of coping with certain challenges during gameplay. Working in pairs or in small groups had been a central topic of interest. This session also included task allocation, observations and interviews with the children.

The fourth session focused on interactivity issues during gameplay, comprising task allocation and children observation. Teamwork had also been an important aspect, stressing on how children interacted with the game environment and their peers. This session also included brief follow-up interviews with the participants.

Although my presence in the school lab was limited to only four one-hour sessions, I felt comfortable to interact with children and work towards building relationships of trust and respect. I had the opportunity to apply the activities that I had prepared and discussed in my research proposal (see chapter 4), in order to give prominence to children's thoughts and attitudes regarding their interactions with digital game environments and their interactions with their peers during gameplay.

The second research group played games in the context of an after-school home-based activity. This group was equally formed by 11 children, aged 7-12. Although it followed the same session planning and the same game list as the first research group, children worked in smaller teams of two to five children. Working in smaller teams, within

the home environment, with fewer rules than those of the school environment, the second research group worked with greater flexibility (Figure 4.3).



Figure 4-3: Children playing in the home-based activity

In general, the first phase of the research studied “children's interactive narratives” focusing on the interaction element. As highlighted in chapter 3, players use frames to structure and interpret their game experiences and social interactions. Specifically, the choice of Goffman’s frame theory suggested micro-sociology (Goffman, 1959), which enhanced the study of children’s gameplay as an everyday activity, and fostered the analysis of children’s interactions, on the basis of the methodological tools of game rituals, the image of the player’s “self” and the relations to others. Thus, children were studied as

players in contexts that afford interactions and relations amongst peers, in the settings of both school and family.

4.6 Phase two: Focusing on children as digital game players' narratives

Phase two was based on the outcomes of phase one, and more specifically, the choice to further study children's interactions, claiming that gameplay interactions “fuel” children’s narratives by depicting their own game experiences (see 2.5). To do so, phase two made use of the flexibility offered by the after-school home-based activity in terms of group composition, game duration and ways of recording children's play.

The participants of phase two were 19 children, aged 7-12. As already explained in 4.4, the second phase of the research included 14 participants from the first phase and 5 new participants. In the context of an after-school home-based activity, sessions took place at the homes of children participants or the researcher’s home, in a room equipped with a PlayStation and a PC or a tablet, connected to the internet (Figure 4.4). Each participant attended at least 5 sessions in a time span of 31 months. All phase two sessions involved free play on *Fortnite* game, namely, children participants had the freedom to play *Fortnite* without any specific gameplay task allocated by the researcher. In phase two children felt free to decide on the length of their gameplay. However, most sessions lasted from 90 to 120 minutes. Participants were asked to choose to play *Fortnite* on PlayStation, on PC or on the tablet (Figure 4.5). In some cases, children decided to connect and play from their own home. However, this did not cause any problem to our research due to the online connection of all player(s) during gameplay. In addition, gameplay as well as

communication between co-players were recorded, with the PS4 built-in game play recorder, in the case of the Play Station game play, or with the Stream labs streaming and recording software, in the case of PC game play. The collection of non-vocal cues was limited, as a result of not being able to see the players' faces and bodies. However, certain non-vocal cues were collected through avatars' movements, which, apart from taking part to the battle, they also reflected players' feelings and thoughts (dancing, shooting, giving, taking, jumping, running, falling down, getting up, climbing, constructing), but did not give any information on avatars' face expressions.



Figure 4-4: Playing Fortnite on PlayStation and on tablet



Figure 4-5: Freeplay on Fortnite in the home-based activity

Interestingly, each gameplay started with an introductory phase of location and co-ordination between co-players in the game world. An ordinary question among players, at the beginning of the *Fortnite* gameplay had been: “Where are you?” referring to the location of the child-player in the *Fortnite* game world. In the case of Aris and Nick discussed later in excerpt 24, both players travel with the battle bus and touch down in Pleasant Park. Nick starts the conversation by identifying the place that they have landed: “Ah Pleasant”. In all sessions of this phase, the researcher remained an observer and had

no interference during the gameplay. Soon after the introductory phase which facilitated players to situate and coordinate their avatars in the game space, children immersed themselves in their gameplay and paid little or no attention to the appearance of the researcher in the room.

With regard to the narrative element that appears in “children’s interactive narratives”, Bakhtin’s dialogism theory emerged as a useful analysis tool because it focuses on the players’ exchange of utterances and their interrelation to the social norms. The dialogism elements selected for the detailed analysis of children as digital game players’ interactive narratives were polyphony and heteroglossia, chronotope and transgression.

4.7 Triangulation

Qualitative research has been often imputed upon the quality of the collected data and their respective analysis. Thus, credibility issues in qualitative research concern the accuracy and inclusiveness of the collected data, as well as the integrity and credibility of the researcher (Patton, 1990; Denzin, 2006). Triangulation involves the use of multiple data sources or methods in combination, in order to produce rich and robust results. It enhances the research validity because it assists in adequately reflecting the reality of the phenomenon under study. According to Patton (1990, p. 1193) triangulation can be achieved in the form of “methods triangulation”, which uses findings of different methods of collection, “triangulation of sources” which focuses on different data sources emanating from the same method, “analyst triangulation” implicating multiple analysts, and

“theory/perspective triangulation” which combines multiple theories or perspectives to analyze data. Patton (1990, p. 1197) considered the above types of triangulation as “*strategies for reducing systematic bias in the data*”, giving the possibility for the researcher to cross-check evidence and “*guard against the accusation that a study’s findings are simply an artifact of a single method, a single source, or a single investigators’ biases*”.

In this respect, I used “triangulation of sources” in order to check the consistency of the data gathered by different collection methods. Thus, participant observation data were compared to data collected through interviews. Accordingly, children’s drawings were compared to data collected through children’s interviews.

4.8 Ethical issues and dilemmas

According to Holloway (2014) “Contemporary childhood has undergone a profound transformation, where children’s play and social interaction is migrating to the digital realm with a move towards generated content and children’s online communities” (p.9). However, conducting research with children on digital games poses a number of ethical issues and concerns that the researcher must address (Holloway, 2014; Facca et al, 2020). Indeed, the involvement of children in research raises concerns about participant consent, safety, confidentiality and anonymity. In addition, research on children and digital games should prevent cases of excessive exposure to digital games and inappropriate game content. The above constitute issues to be addressed in all aspects of children's contact with

digital games, both in everyday life and in research, and should be treated with the aid of dynamic and up-to-date ethical guidelines and standards (Holloway, 2014).

The above has been related to restrictions regarding the school regulations and the choice of games. Specifically, in the first phase of the research on children and digital games, I had to cope with limitations on the choice of digital games. For safety reasons, in the case of the school workshop, I had to cope with the school computer lab rules, which did not allow the installation of games on the lab computers. In order not to lose interest in the research, children were regularly asked to provide feedback on the game selection and to suggest possible additions to the research game list. Predictably, a small number of children's suggestions could be satisfied. To overcome these difficulties, I provided a tablet with some additional games installed. The game list was gradually enriched in phase one sessions. This resulted in a plethora of digital games of different types of gameplay: online or offline game, single player, two players being in the same physical space, two players being in different physical spaces, more than two players being in the same physical space, more than two players being in different physical spaces etc. This multiplicity of games, types of gameplay and game equipment reflected on the recording of gameplay and game conversations. In addition, I had to cope with the school rules that did not allow video recording in the school premises.

Regarding child data handling, some parents were reluctant in video recording their children in the after-school activity of phases one and two. Thus, I chose to use video

recording in gameplay and players' conversations whenever I was allowed. In all the other cases, as well as in children interviews, recordings were made without image.

Finally, the school environment as opposed to the child's home environment also posed dilemmas regarding research in the two environments of different characteristics and dynamics. Characterized by discipline, the school environment contrasted with the home environment, which had a strong characteristic of relaxation. In this context, the study of children's gameplay presented contradictions. Asking a child to play in order to study its' play and behaviors needed careful handling in order for the child to overcome the constraints that the particular environment imposed, so that play would be anticipated as a pleasure rather than a task to be completed.

4.9 Conclusionary points

The research problem of the current study considers how the narrative and the interactive elements are related in children's gameplay. Given the social character of game interactions, the theory of frames and the theory of dialogism were selected as methodological tools in the study of "children's interactive narratives". In the context of an ethnographic qualitative research, the data collection methods were participant observation, interviews and drawings as stimulation recall. The research involved 30 children aged 7-12 years old. Children participants played digital games in two different settings, a school workshop and an after-school home-based activity. It was implemented in two phases. Phase one laid emphasis on children as digital game players' interactions

and provided data on how children structure and interpret their game experiences in their everyday life. These data were analyzed according to Goffman's frame theory, on the basis of game rituals, the image of the player's "self" and the relations to others. Building on the outcomes of phase one, phase two differentiated in terms of the selection of an online multiplayer game to replace all the games of the first phase, which were either played by one or more players. Phase two emphasized on the study of the narrative element of "children's interactive narratives", which takes the form of an exchange of utterances between players affected by the social norms of their environment. Phase two data were analyzed according to Bakhtin's dialogism theory, with the use of the elements of polyphony, heteroglossia, chronotope and transgression. Furthermore, seeking for more flexibility (less restrictions on the choice of games, time and place limitations), phase two was implemented in the form of an after-school home-based activity, where children played games in groups. Apart from the limitations regarding the school regulations, the school environment in the school workshop contrasted the home environment of the after-school home-based activity. Thus, there were contradictions in the study of children's gameplay, suggested by the constraints that were imposed by the school environment, where play would be anticipated as a task to be completed for the workshop, rather than players' pleasure.

CHAPTER 5

Analyzing children as digital game players' interactions according to the concept of frames

To explore children's interactions within digital game worlds, my research was implemented in two different settings: a school workshop (in phase one) and an after-school home-based activity (in phases one and two). The selection of the two settings was made in order to provide a more complete picture, collecting data from two characteristic contexts in children's everyday life. As seen in chapter 3 digital games support frame construction and enhance players to structure and interpret their game experiences. In this chapter I discuss cases of frames which are observed during children's gameplay, existing in or out of the game world, and consider how children structure their experiences within these environments through frames. The discussion of the collected data that follows, regards the analysis of children – players' interactions according to Goffman's frame theory. In this respect, I focus on frames' elements like the image of "self", relations to others and rituals.

5.1 Episodes of coping with game boundaries: placing "self" in the game frames

From the beginning of the gameplay the child player is urged to cross a boundary and enter a new world, the game world (Huizinga, 1955, see chapter 1). However, although

the magic circle metaphor indicates the existence of a separated gameplay area, Calleja (2012) and Juul (2008) argued for the transparency of the magic circle boundaries. In our case, by entering the digital game magic circles, children moved from the school or home reality world to the fictional game world. Nevertheless, during their game trajectories children had to deal with a “negotiable boundary” (Juul, 2008), meaning that they had to cope with elements of both worlds, the real and the fictional, and negotiate their mutual impact.

Providing a form of culture of an increasingly mediated age, digital games are particularly rich in socially constructed meanings, like winning or losing. At the same time, as described earlier, gameplay allows the integration of the player's own social environment elements through frames that the child creates in order to organize his/her experiences. Thus, interacting in the game world is connected to placing the player's “self” in the game existing frames, or in new frames, created by the child-player.

The following brief episodes focus on examining in depth specific excerpts of children's interactive narratives, with emphasis on frames and the player's “self”.

In the first episode, while playing *Subway Surfers*, Aris realizes that good moves are rewarded and contribute to the player's self-awareness. Aris, aged 9 is a tinkering lover who started playing games at the age of 7, at the beginning of our research project. His first steps in gaming had been restraint. Far from being characterized as a committed player, Aris showed preference in action games of simple mechanics like *Subway Surfers*, moving

the character by swiping his fingers across the screen. He started playing *Minecraft* in the context of our research sessions. Within a short time, he made great progress.

Taking his first steps with games, he developed a tendency to make up stories for the parts of the games that were not clear to him. In *Subway Surfers* he gave a special name and invented a whole story on a specific mission that he had to complete, which he considered of great importance. Here, he enters a part of the game that he considers important:

1	<i>Aris: The obstacle that we are jumping right now is quite easy. But moving sideways (pause while playing) ...LOOK! LOOK! Oh!.. (pause while playing) Oh my God! Look here for example. Look! I'm in the tunnel now. I also find difficult jumping from one train to the other. And also (jumping) these obstacles (shows the obstacles on the screen). There is no...(pause) Bbbb! (shouts)(I'm) perfect! I'm cool! I'm cool! (lilts). Did you see this? I'm back in the "Ekordat" level.</i>
2	<i>Researcher: What's the name of that level?</i>
3	<i>Aris: Ekordat! Other people call that differently. I don't know the other name of this level.</i>
	PAUSE WHILE PLAYING

4	<i>Aris: My friend Maria plays Subway surfers for years and she has never been to the Ekordat level. She told me that. It's true (tone of voice changed), she did tell me that.</i>
	PAUSE He has stopped playing. <i>He resumes playing</i>

Episode 1: Aris describes his moves while playing Subway surfers

In this episode, paralinguistic and prosodic cues such as Aris' intonation and volume ("I'm cool", line 1) and formulaic expressions ("Look! Oh my God!", line 1) indicates that he is winning. A textual contextualization cue culminates his satisfaction with the game ending: Aris uses a word that he has invented to mark a desirable level of the game: The "Ekordat" level (lines 1, 3, 4). "Ekordat" stands for a word that he has made up, representing a part of the game trajectory that he is fond of. Although there are no special indications in the game for this, Aris considers it of great importance and relates it with his gameplay achievements. Aris is working towards meaning creation in an effort to express his feelings about reaching his goals in the game. His efforts can be viewed as a response to what he interprets as his social background demands (Blommaert, 2007; Jaspers, 2011). His narrative reveals the creation of a new frame. Specifically, by inventing the story of the "Ekordat" level, Aris creates a new frame and places himself in it. The presence of "self" in this improvised frame reveals the effort of this new player to join the world of the game and claim the title of a good "cool" player. In his discourse he attempts

to establish his view of the game world, although he is aware that this is subjective. He mentions that other players call this level otherwise, however, he insists. His discourse is socially situated, considering what Maria and other players do or say. In this context, he opts for a controversy: It's his view against the others'. In this battle, he needs recognition. This is the feedback that he gets from the game and from himself, crying and tilting "I'm cool". In search of that recognition Aris alludes to other people of his environment that have not reached the "Ekordat" level (line 4). However, the use of prosodic cues giveaway that he is not being honest: "It's true, she did tell me that" (line 4).

Besides, in this episode, according to Mayra's model (2007), Aris moves to different contextual layers, in an effort to get the identity of the "good player" and gain recognition. While being in the digital context of the game, he is open to his immediate social context, being interviewed by the researcher. To compare his achievements to others', he juxtaposes his immediate personal context ("I'm cool!" line 1) with his immediate social context ("My friend Maria...", line 4).

Similarly, during his first steps in *Minecraft*, learning to create a nether portal inspired him for making stories. A year later, being more experienced in *Minecraft*, Aris looks much more confident during the game play. Presenting his *Minecraft* house, Aris maintains a more realistic view on game elements. He doesn't make stories any more. What he finds challenging is showing his knowledge and skills on the game, without turning to made up stories:

1	<i>Aris: I chose to construct my house in flat, creative mode, because I wanted to make it huge. There is a ditch all around it, filled with lava. I've also constructed a swimming pool where I have placed some kind of a springboard, made of iron. My house is made of...sandstone...I have also made a flower bed where I planted pumpkins and straws, feedstuff for sheep. Inside, I have planted small plants. Along, I have planted a clinging plant. Now, let's go inside. As we already know, in creative mode we can fly. So, I fly and I can do many things to...mm. On the first floor I have also smashed the ground down... Eh...basically the ground floor, and I have put wood. A kind of jungle wood. I have constructed a big showcase that covers one eighth of the whole floor. Inside, I have imprisoned, I haven't placed, I have imprisoned a villager, he is very annoying, a villager and a snowman.</i>
---	---

Episode 2: Aris describes his house construction on Minecraft (1)

During the description of his house construction, Aris is switching between codes. While speaking in Greek, he is frequently using *Minecraft* English vocabulary (creative mode, sandstone, villager). Our tour of the house built by Aris in *Minecraft* forms a new frame characterized by intense code switching. Code switching while playing digital games is very common because it facilitates player's expression of the game events by connecting

the player's in-game contexts and the real-world contexts. In this new frame that is created, the protagonist is the player himself (frequent use of "I"). Furthermore, the meeting of multiple contextual layers on the basis of players' experiences results in meaning creation. Thus, in *Minecraft* the meeting point of the digital game context, the immediate social context and the immediate personal context of the player allow for the meaning-making of *Minecraft* peripheral signs like the house and its' spaces, living entities (the snowman, the villager, the sheep), construction materials (sandstone, jungle wood, lava, water) and player moves (construct, fly, smash, plant).

However, Aris seems to struggle between contradictory discourses focusing on the construction of his own identity as a *Minecraft* player. He seems to balance between a "good" creative mode player and a "bad" survival mode player:

1	Researcher: <i>Have you ever played in survival mode?</i>
2	Aris: <i>Yes, but I am useless. Not that I am useless. It's somehow difficult.</i>
3	Researcher: <i>You probably haven't had enough practice on that</i>
4	Aris: <i>No, you don't understand. I know how to play survival. What did you think?</i>
	<i>..... Pause (while playing)</i>
5	Aris: <i>(It's not that) Minecraft doesn't need practice, it's that I find survival mode boring. It's because...how can I say... (gets frustrated). In survival, in survival you have to collect all your material by yourself. You</i>

	<i>have nothing, no material. You have limited meat, you have...everything is so limited.</i>
--	---

Episode 3: Aris describes his house construction on Minecraft (2)

In episode 3 Aris positioning lacks flexibility. His words are rich in prosodic features (“No, you don’t understand. I know” “What did you think?” line 4) show that he feels offended. He even tends to be aggressive, rejecting the other speakers’ view and bringing front his own. From his telling it appears that the researcher touched his Achilles heel, which relates to Aris’ qualities as a game player. Later on, to support his view, he puts forward an argument, which seems to be far from being sound. Although he characterizes survival mode as boring, one guesses that he probably finds survival mode hard to cope with. His frustration is expressed by fast rhythm and intonation on the one hand and numerous pauses on the other (line 5). Eventually, in episode 3, the player’s “self” needs to cross the game world and the real-world boundaries. Thus, the digital game context, namely the game rules in survival versus creative mode is in conflict with the player’s immediate personal context, which relates to Aris’ belief on whether he is a good *Minecraft* player or not.

Playing digital games, the player seems to develop new experiences and construct his own player identity along the way. At the beginning, Alex used to create his own

narratives, diverging from the given game narrative. His narratives were issued to cover the gap between the game reality and his own interpretation of it. This is probably connected to his efforts to internalize the norms and rules that he had to face in the context of the game. He seemed to be in a constant dialogue with his “self”, seeking answers without success (Vygotsky 1978). Potential weaknesses to comprehend and conform to game rules were turned into imaginative new stories, and are probably related to the player’s young age and lack of gaming experience. Playing *Minecraft*, Aris is now challenged to go a step further. Although he is getting the satisfaction of creating things on his own, this is a time of self-reflection: What’s his viewing of himself as a *Minecraft* player? His self-identity seems to be constructed out of contradictory and indeed antagonistic discourses (Jorgensen & Phillips, 2002).

In line with Mayra’s (2007) model, the player's experience is shaped by interrelated contextual layers that connect to the player’s thoughts and actions during game play. In Aris' case, making up new stories out of the game relate to his immediate personal contexts and the way he views his own game play strengths and weaknesses. According to Ito et al (2009 p. 58) young people’s engagement with technology enhances “learning to navigate esoteric domains of knowledge and practice”. Playing games remains an on-going process, which involves among others increasing one’s competences, expanding one’s game strategies, and developing an identity (Ito et al, 2009). To this end, growing up, children attain a degree of maturity that brings changes in the way they view themselves and their game play. This probably explains the decline of making up stories on games for Aris.

As mentioned earlier, Juul (2008) considered the digital magic circle as a “negotiable boundary” between the two worlds. The following episode consists an example of negotiating the game and the child’s reality by transferring real world elements that define the child-player’s “self”, that is home and extended family (Figure 4.2), to the game world:

Apostolos, aged 8 likes to play *Wii* (Figure 5.1). *Wii* is a home video game console which works with the Wii remote controller and detects movement in three dimensions. Games developed for Wii are mostly sports games, requiring players’ high physical movement. In the following excerpt Apostolos uses the Wii avatar creator. Using the avatar creator format, among a series of menus, Apostolos creates the game characters by selecting the face shape, hair style, eye style, eyebrows, nose shape, moustache style, a beard shape and even the shape and position of a mole in the avatar face. In this session he set the task to create the avatars of his most intimate persons. This includes his family and friends. Apostolos has already played Wii with some of them, so they already have their own personalized avatars. Being an experienced player in *Wii*, Apostolos knows that these characters may appear in the game in two ways: either as player avatars or as non-player characters (NPC), randomly selected to appear during the game.

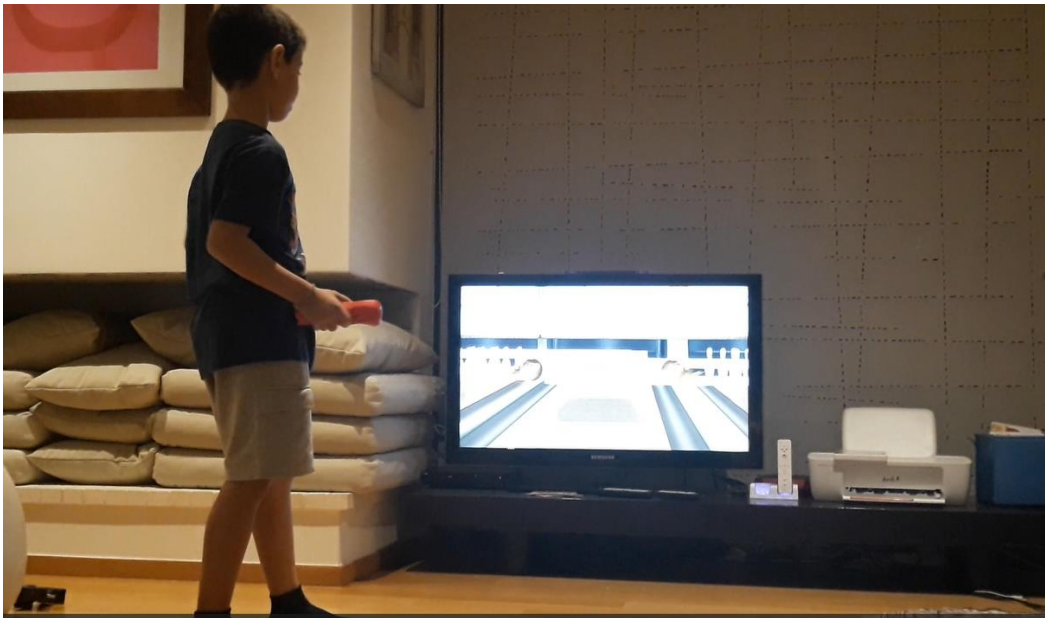


Figure 5-1: Playing Wii in the home-based activity



Figure 5-2: Working with the Wii avatar creator. Creating family avatars.

1	Apostolos: Look! I created my Wii co-players. This is my grandmother, Maritsa. (shows the avatar hair) That's exactly her hair.
2	Researcher: Do you play Wii with your grandmother?
3	Apostolos: Not yet. But we will play together later on.

Episode 4: Apostolos creating game avatars

This time Apostolos decides to create the avatar of his grandmother, Maritsa (Figure 5.2). His grandmother is a very dear person to him. She has been a person he often plays with since he was very little. According to (Walkerdine, 2007), children of this age are expected to seek the presence of familiar persons in a digital game world. Indeed, the presence of familiar persons' avatars can provide a sense of security in an unknown game world. Furthermore, for Apostolos, the presence of his grandmother in the game world as a potential co-player marks the extension of their play from the real world to the digital world. Discussing the avatar creation with the researcher, Apostolos highlights the similarities between the avatar and the real grandmother. He accepts that he hasn't played *Wii* with her. However, he shows certainty that they will play together in the future.

Another example of children's negotiable boundary between home reality and the game fictional world is Noah's case. Noah is a kind boy aged 12, who has just experienced the loss of a beloved close relative. He lost his grandfather. Rather introverted, he does not

wish to share his feelings with others. Our first session in phase two home-based activity coincided with this hard period. Noah is a heavy gamer. He loves adventure games. He also plays *Minecraft* very often. He usually plays Minecraft online with friends, either on a server or by invitations to other players' worlds through Wi-Fi.

Our first talk on Minecraft was not scheduled. It started out as a casual game demonstration, but soon turned out to be an unexpected exploration of hidden feelings. We met in Noah's place. Our discussion was followed by Noah's sister Vicky, aged 11, who also plays *Minecraft*.

While discussing online playing, Noah eagerly took the researcher's smartphone and connected it to his own tablet through Wi-Fi. His sister came by and showed interest in the conversation. The game had already started. Noah and Vicky set off constructing a house together. While collaborating, Vicky mentioned that she wanted to plant a tree inside the house. Noah didn't say a thing. However, after a while he asked his sister to follow a path he was about to construct. She did so. Noah let the researcher watch both screens but asked not to reveal his plans. Vicky kept on following the path, until she stumbled on a column, right next to the tree that she had planted. It turned out that the column stood for a tomb. Apparently, Noah had created a cemetery in the game world and guided Vicky in it. The unveiling of Noah's idea saddened Vicky. However, neither Noah, nor Vicky seemed to feel that something creepy was in the air. In a rather good mood Vicky decided to plant many colorful flowers and Noah placed his avatar in front of a grave.

1	<i>Vicky: I'm thinking about planting a tree inside the house.</i>
	<i>..... (Pause: children playing and not talking to each other)</i>
2	<i>Noah: Hey Vicky, I've got an idea. Look for the path I'm constructing. Follow that path.</i>
	<i>(Vicky follows Noah's path. The researcher watches Noah's and Vicky's screens at the same time. Noah makes a motion to the researcher not to tell Vicky what he is constructing on Minecraft).</i>
3	<i>Vicky: Where am I going? What are you up to?</i>
4	<i>Noah: You'll see...</i>
5	<i>Vicky: What's this? It's the place where I planted my tree! You made me circle for nothing...</i>
6	<i>Noah: Watch carefully. Do you know what this is?</i>
7	<i>Vicky: A cemetery?</i>
8	<i>Researcher: It looks calm... Actually, It's quite peaceful and neat...</i>
9	<i>Vicky: I'm going to plant some flowers. Make it a happier place.</i>
10	<i>Noah: I'll put lava on the corner. And I'll place Steve there, as a visitor.</i>

Episode 5: Noah and Vicky playing on Minecraft

The above dialogue suggests an unexpected journey to the game virtual space. Noah assumes a leadership role by setting up a little game of exploration in the *Minecraft* world. This is expressed by a series of contextualization cues. It starts out with a pause and is followed by the address to his sister “Hey Vicky” (lines 1-3), and the use of verbs in imperative form, indicating that he is giving directions to his co-player (lines 2, 6). Equally, Noah’s leadership tendencies in the game are stressed by his motion to the researcher not to reveal to Vicky his plans (lines 2-3), as well as being reassuring to his sister (line 4). Vicky eagerly becomes his follower, whereas the researcher maintains her role of observer, encouraging him by not revealing his moves to Vicky. The meanings established relate to moving in game by seeking answers to questions regarding “Where?” and “What?”. Thus, signs acquire new meanings: a cemetery is introduced to the game play, not as a sad or a creepy place that kids make fun of. On the contrary, given Noah’s immediate personal context affected by his family’s tragic loss, a cemetery is an unknown place that he is about to visit, in difficult conditions. Put differently, a cemetery for Noah is connected to an aspect of the reality he has to face, although he doesn’t feel ready for it. By creating a cemetery in the game world and presenting it to his sister and the researcher, Noah gets the chance to express his feelings about what he is about to experience in real life. In this sense, the game world serves as a “safe” place that he can experiment and possibly reflect (Huizinga 1955). In the game world human loss is not definite, therefore, it can be easily dealt with. The cemetery seems to be the meeting point of two oddly incompatible worlds:

the virtual game world and the real world. Dealing with it in the game world makes it easier for him to prepare for what the real world has in store.

Noah's sister, Vicky, also has to come to terms with her grandfather's loss, but in her own way. Her reaction to Noah's game is somehow contradictory: although she eagerly participates in her brother's game by following his path, she questions "Where am I going? What are you up to?". She even doubts the whole game by asking "What's this? It's the place where I planted my tree! You made me circle for nothing" (line 5). She is also deeply affected by the family loss. Her questions reflect not only her tension at the beginning of the game play, but also some doubts on her brother's initiative. Her remark on making her circles, only to discover the tree that she had already planted reveals her tendency to establish her account as solid and objective, contrary to her brother's efforts. Overall, a meaning consensus is achieved. Noah's game culminates with Vicky's participation (lines 9-10).

In Noah's and Vicky's episode, the Minecraft world served as a space where both kids placed their fears and insecurities. The transition from the real world to the fictional world of the game happened easily. This was probably due to the abstract nature of the game world, related to the infinite possibilities that emerge from the arrangement of a fixed grid pattern of cubes (Figure 5.3). Being allowed to take liberties with their creations, children were able to create a new frame within the *Minecraft* game frame, construct their own narrative and express their real-life emotions. Having as a starting point Vicky's idea on planting a tree and an end point marked by the player arriving at an unforeseen

destination, the narrative they created provided the surprise element enhanced by the children's immediate social context (Mayra 2007). Noah's and Vicky's narrative indicates that their game play experience had been shaped by different contextual factors, interrelated to the formal game characteristics (Mayra 2007). Their game play reflected their recent family experience. Creating a narrative through game play seemed to assist them in organizing their experiences and their own emotions (Bruner 1990, 2004). By sharing his thoughts with his sister and the researcher, Noah advanced towards a "katharsis", accepting the loss of his dear grandfather.

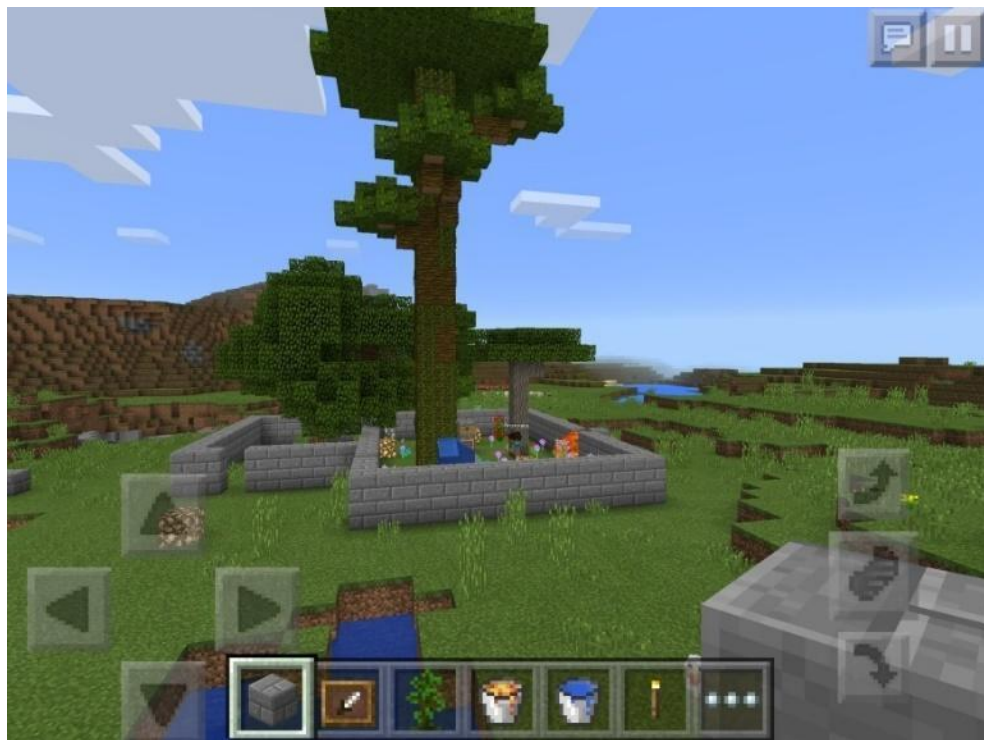


Figure 5-3: Noah's and Vicky's game world

As seen earlier, Jorgensen (2013) considers the game world as a spatial construct that hosts a wide variety of situations and players' actions. Wolf (2010) also considers space navigation as an example of player interactivity. Indeed, game worlds are characterized by a multiplicity of spatial relationships in which the player is engaged, in the form of an ongoing dialogue with the game environment. In this context the player gets immersed in the game world and has to cope with the multiple game challenges. Another point of interest about immersion, the relation between immersion and interactivity has been the object of study of Mary Laure Ryan (2015), who saw them both as constituting elements of the player experience. Specifically, Ryan distinguished the player's two-sided function in the game world: He is moving inside the virtual world and at the same time he is controlling it. Commenting on Ryan's views, Walkerdine (2007) saw a clear correspondence between Ryan's (2015) immersion-interactivity connections and Manovich (2003) description of new media as oscillating between two poles: the pleasure of delving into a fantasy and the constant need to control it: "Ryan and others' work demonstrates that there are two kinds of fantasy working together - that which takes us into the world and that which has us controlling it" (Walkerdine, 2007, p.19).

While interacting with the digital game environment the child player is getting immersed in the fictional game world. In fact, spatial immersion starts as soon as the player identifies in the game world a familiar space (Wirth et al, 2007). In the case of *Minecraft*, spatial immersion is connected to the player's favorite places like his home construction.

When two players meet online, the identification of the familiar space is followed by locating the co-player. To this, an ordinary question among players of online games, at the beginning of the game play, which alludes to the game rituals, is: “Where are you?”

Managing the game environment does not only concern following the game rules. It also relates to communicating during gameplay. However, communication deals with other players and game entities or people who belong to the player’s physical space.

In the following episode, in the school workshop Stella is playing *Bob the Robber*. In this online action game, the player has to find his way through a building and accomplish a series of missions, being careful not to get caught Stella’s game play is watched by three other workshop boys.

1	Stefanos: Get in! Get in!
2	Myrsini: Enter a passcode... (Child 4 enters a passcode that doesn't work)...What shall we do?
3	Markos: Do it at random: 1,2,3,4
4	Stella: I'm in! It worked!
5	Myrsini: Read the instructions! What does it say?
6	Stella: Where is the switchboard?
7	Stefanos: I know, I know!... (shows the table somewhere in the building). Here it is!
8	Stella: I'm on the elevator now.
9	Stefanos: Watch out for the robot!

Episode 6: Children's communication during gameplay

In the above episode all four are very excited. The frequent use of “I” (lines 4, 7, 8) marks the intense presence of Stella and Stefanos “self”. The use of the imperative (lines 1, 2, 3, 5, 9) and the rapid pace of the conversation are indicative of their engagement in this game play frame. Their vivid conversation and their prompt references to space (lines 1, 4, 6, 7, 8, 9) show that they are all immersed, even though only Stella is playing the game. Listening to their conversation, one could argue that they are trying to get out of a real building and not a fictional one. While playing, they cross boundaries and they sound as if they are trapped somewhere between the game world and reality.

Throughout gameplay the player is also attracted to objects and locations. Children players tend to develop emotional attachment to certain locations of the game space, as well as to certain game objects (Shoshani et al, 2021). In our research, children were particularly attracted to certain game locations, game objects, and game skins that, in their view, gave value to their game play or had a special impact on them. In this chapter Noah created a cemetery in *Minecraft* to express his feelings of the loss of his grandfather. Game locations matter to children players as they constitute positively charged areas to them. Playing *Minecraft*, it is very common to start out by building ones' home. Earlier in this chapter Aris explained his thoughts regarding his house construction, willing to show his

skills on the game. Similarly, George speaks about his home construction, revealing his will to keep in touch with a new *Minecraft* friend, Jimmy.

	George: <i>(making gestures, speaking very fast, looking very excited)</i> And now, we climb up the stairs and we go to the second floor. This is another bedroom. It's Jimmy's (bedroom). You can see his bed here, a chair, some books, things that he can eat, I've even placed some clothes for him over there! (he shows the Minecraft clothes hanging on a closet).
2	Researcher: Do you and Jimmy play Minecraft together?
3	George: Yes! The other day Jimmy let me play with him on his server! Now, I'm planning to do the same!

Episode 7: George speaks about his home construction

In this episode George describes Jimmy's room, a room that he prepared for his new friend. The room serves as a new frame that allows George to express his thoughts and feelings about his immediate personal context. Although brief, this piece of narrative is characterized by prosodic and non-vocal cues: George is making gestures. He also speaks very fast. He is very excited of his new construction. The detailed and carefully created room for his friend, as well as his statement in line 3 express his expectation to continue his friendship with Jimmy.

To summarize, children as digital game players' interactions can be explored through frames, providing information on how children structure their game experiences. Children's interactions appear in the game existing frames or in frames that the children create and inform on how the child expresses his/her "self". The above frames concern mainly influences from the child's immediate personal and social context. They are centered around the connections of "self" and the player's effort to construct his/her own player identity, to relate the player's real-world contexts with the game world, to place his/her fears and insecurities, and to express his/her thoughts and emotions about his/her immediate personal context.

5.2 Episodes of playing with peers, friends and family: studying "relations to others" in game frames

Relations to others constitute another element in the study of frames in Goffman's theory. According to Goffman (1959), game rules feed players' interactions, in terms of group formation, establishing supportive relationships between players, disagreement or humor. According to Persson (2019) in digital play these forms of social interaction may differ, in situations where co-players are not in physical proximity and are present through an avatar. In the current research children's digital play concerns playing with peers, friends and family in the school workshop or in the after-school home-based activity. In the following episodes, children participants played digital games in physical proximity.

The next episode concerns the game play of two boys aged 9, Kostis and Dionisis. Even though they were different in character and recently became acquainted, they were asked to play together. They chose to play *Penalty fever*, a single player football game. In order to do this, they decided to share the mouse and assume distinct roles: the shooter and the goalkeeper. They considered themselves as a team fighting against the computer. Later on, Kostis played *Subway surfer*. Dionisis watched his gameplay and made very positive remarks.

1	Dionisis: He is a good scorer and I am a good keeper. (sounds very excited)
2	Kostis: We are beating the team of Algeria by 3-0! We lost to another team, but now we are winning! (sounds very excited)
	...
3	Dionisis: You are (a) good (player)!
4	Kostis: I'll soon reach 5300 (refers to the game score) ...Just wait and see! Look! Now! Aaaa!
5	Dionisis: No way! You can't reach 5566! (little pause, he is watching Kostis play) Hey, come on... don't lose!
6	Kostis: (talking to the researcher) Dionisis broke the game record!
7	Researcher: Kostis, you seem to be very fond of this game!
8	Kostis: I am, indeed!
9	Dionisis: (He is) like me! He loves this game!

Episode 8: Getting to know each other through gameplay

In the first part of the episode Dionisis and Kostis voice tone shows that they are both very excited (lines 1-2). Kostis' recurrent use of "we" shows his feeling that he and Dionisis form a team in this game (line 2). In general, Dionisis makes positive evaluation remarks about his co-player (lines 1, 3, 5, 6). The favorable comments of his co-player enhance Kostis confidence. He feels proud and sets new goals in the game (line 4). By deciding to play the game differently, children create their own frame, based on sharing and assuming roles. In this frame, harmonious relations stand out. Apart from the creation of their gameplay frame, Dionisis creates other frames by recalling cases of his earlier experiences with digital games and tries to match them with Kostis performance (lines 4, 6, 9). That way, Dionisis appears to consider changes in his immediate personal and social contexts, introducing Kostis in them.

As mentioned earlier, harmonious relationships and disagreements relate to players' characteristics as well as to their personal context. Thus, through game play a kid may join a clan, like Rania who manages to enter the girls' group in the school workshop (episode 9) or be kicked out from a clan, like Jakob, who is rejected from his online clan for not being a good player (episode 10).

In the next episode, Rania, aged 9 is a quiet girl participating in the school workshop. Being one of the three girls of the workshop in a total of 11 children (see chapter

4), Rania faces the challenge to be integrated in the girl clan which was formed in the context of the workshop. In the brief follow-up interview at the end of the first phase (see chapter 4), Rania looks back on her relationship with her co-players.

1	Rania: I used to play on my own. It was getting boring. Now, I play with the girls. We play Stardoll.
2	Researcher: Do you play other games in the school workshop?
3	Rania: No, we only play Stardoll.
4	Researcher: Why don't you try (to play) other games?
5	Rania: The other girls (of the group) prefer this game. They want to collect points. I don't mind. It's OK.

Episode 9: Rania enters a group of children players

Rania admits that she didn't like to play on her own (line 1). So, she decided to join the other two girls of the workshop who only play a fashion game, *Stardoll*. She also admits that she lets the others decide what game to play and that the team's main aim is the collection of the game currency (line 5). Her speech is simple and clear. The use of "I" contrasts the use of "they" (lines 1, 5) regarding Rania's needs opposed to the clan's needs. In the frame of Rania's game with the school workshop team, we observe dominance relations. Rania's speech also makes clear her will to use her game play experiences in

order to place the girl clan into her immediate social context. In order to satisfy her team and keep her role in the team, Rania alters her presentation of “self” and her “relation to others”, which is described by Goffman (1959) as a characteristic case in face-to face interactions.

In his interview about his drawing (see chapter 4), Jakob, a boy aged 8 in the Phase One after school activity talks about his experience on *Clash of Clans*.

1	Jakob: I like Clash of clans.... but sometimes, it makes me feel bad. The other day, I was kicked out of my clan.
2	Researcher: Why do you think this happened?
3	Jakob: I don't know. I guess it's because I am a new player in this game.

Episode 10: Jakob enters a group of children players

This is a typical case for *Clash of Clans*. Jakob seems to be one of many *Clash of Clans* players who felt frustrated and disappointed (line 1) for being kicked out of their clan. According to the game rules players with a higher clan rank have the choice to kick out others below their rank, if they have not complied to the game guidelines. In Jakob's case, being kicked out of a clan constitutes a game play experience which affects not only his immediate personal context, but also his immediate social context and the context that relates to digital games production (see chapter 4). Thus, the frame that Jacob creates to organize this unpleasant experience from his relation to his co-players, runs through a

variety of social contexts Even though the evaluation of Jakob's game play experiences is not within the scope of this research, it becomes evident that contextual enquiries can assist in delving into important social conditions that relate to children's engagement with games (Mayra, 2014). As for Jakob, although of mixed emotions about *Clash of Clans*, according to my research records he continued playing the game over a year after this interview.

Related to children's immediate personal and social contexts, children's gameplay interactions lead to several game frames that are expressed through their narratives. Children as digital game players' relations to others which are observed in digital game frames, range from harmonious relations to disagreements and relations of dominance.

5.3 Depicting digital game frames in children's drawings: the game rituals

Children's drawings from the first phase of my research were analyzed according to the methodology described in chapter 3. Specifically, children's drawings depicted game frames and provided useful evidence on rituals (Goffman 1961b, 1967), like information on the game rules, the depiction of the game sequence, and other elements that concern the beginning and the end of the game.

It is worth mentioning that in children's drawings, creating digitally or by hand marks the choice of a different medium of expression that effectively shapes the message transmitted (McLuhan, 1964). In most cases the choice of the medium for creating visual

narratives was made according to children's own aptitudes. This happens in episode 11, where Aris is about to start his drawing:

1	I'm not good at drawing, so I'll use "Paint"
---	--

Episode 11: Aris working with paint on Subway surfers drawings

In general, drawings on paper focused on details and had better artistic results. On the contrary, drawings on "paint" had their limitations but also provided special tools to use as symbols. Working on "paint" sometimes posed difficulties for children to handle, related to the development of their digital skills. This led to frequent changes in emotions, from frustration to enthusiasm:

1	Alex: I want to make a round circle and copy it...I don't remember how to copy. Where is "copy"? I can't find it... Here it is! But I have to do it. Mrs V (the informatics teacher at school) showed us how to do it but... (he looks frustrated)"
---	---

Episode 12: Alex working with "Paint" on Pandalife drawings

While drawing, kids expressed their understanding of the game concepts and how they identified with the game rituals. In some cases, their interpretations matched the intentions of the game designers. In many drawings there was a reliable depiction of critical game frames. Even though most drawings were created with the child having no access to the digital game, they formed accurate representations of gameplay scenes. At a first glance, children's drawings provided information on the games' main characters. Depending on the game themes, the characters could be people, animals or fantastic creatures. In the drawings, game characters used certain objects like weapons, tools or accessories which were consistent with the gameplay. The game setting was present in many drawings. According to Goffman (1959), not only do game rules feed "players' interactions" (as seen in 5.2), but they feed rituals as well. In the *Minecraft* drawing (Figure 5.4) there is a combat scene where rituals are portrayed by game objects like the sword, the spider, the mob and the dragon. The drawing's combat scene matches perfectly the selected *Minecraft* screenshot in Figure 5.5 and stresses on the representational function of the drawing. Respectively, in his interactive narrative of the game, Tony, a *Minecraft* lover aged 9, maintains the realistic view on game description elements which allude to the game rituals:

1	<i>This is a monster with no hands and four feet, coming close to you and exploding. Behind me there is a spider and above me there is the 'king',</i>
---	--

	<i>the most powerful monster. It is a “dragon”. And this is the king of... “Ender Dragon”, all.</i>
--	---

Episode 13: Tony describes his drawing

Tony’s drawing of a *Minecraft* frame focuses on game description elements. This is probably due to the way he is experiencing the game and his choices during game play. Placing himself in the drawing (“behind me there is a spider”) indicates his immersion in the game world.

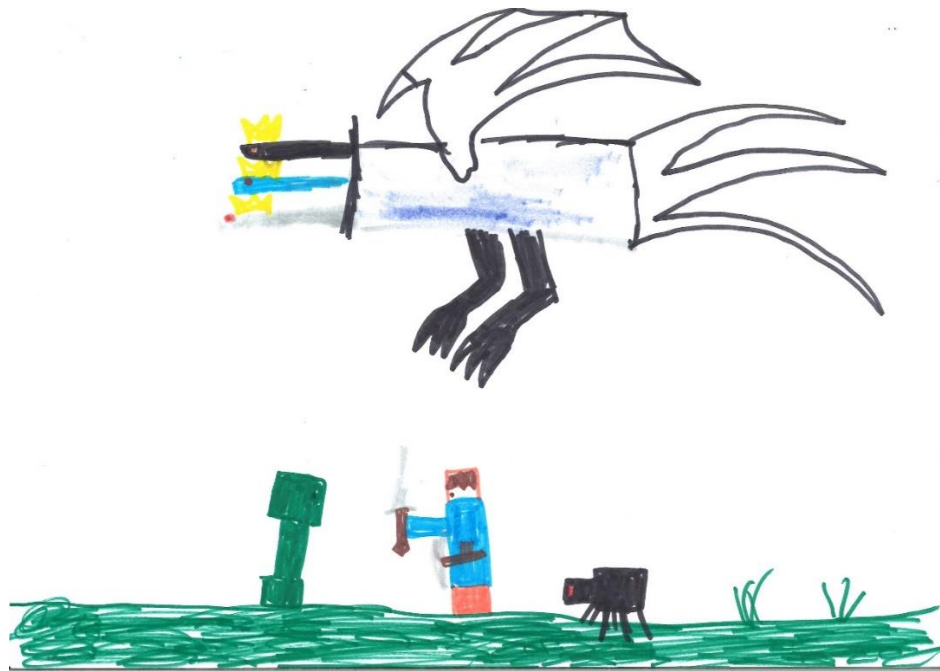


Figure 5-4: Minecraft drawing



Figure 5-5: Minecraft screenshot

Another example of realistic representation of the game world is the *Papa Louie 2* drawing (Figure 5.6), in which Dimitris, who loves drawing, aged 8, produced a detailed work on a current game frame. His drawing emphasizes on details which relate to the game story. The oral interactive narrative on his view of the game frame also lays emphasis on game sequence and other elements referring to the beginning and the end of the game:

1	<i>Dimitris: Papa Louie 2 is a game where you start with a player, you collect coins and try to beat various living food, that is walking onions, burger...</i>
---	---

Episode 14: Dimitris comments on his drawing

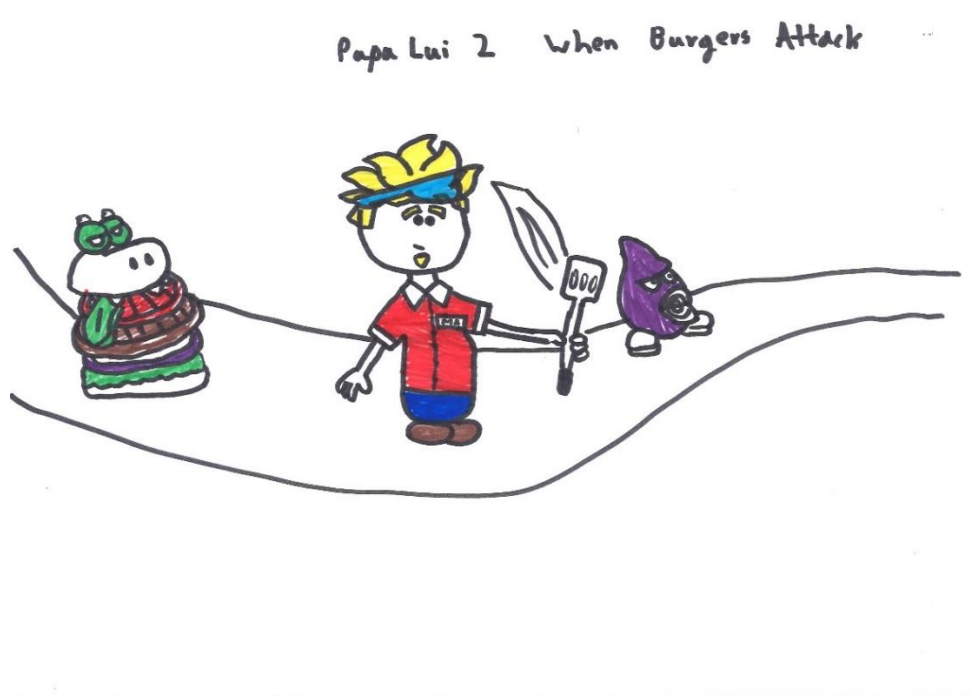


Figure 5-6: Papa Louie 2 drawing



Figure 5-7: Papa Louie 2 screenshot

Theo's drawing of *Raft Wars 2* (Figure 5.8) forms another example of a frame depiction based on rituals. Theo's drawing focuses on the game setting and main game objects, alluding to his consideration to the game rules. Furthermore, Theo took liberties in order to better represent some game elements that could not be depicted otherwise. Given that in the game world the distance between the two boats is long and does not appear in a single computer screen, in order to better manifest the game frame, he minimized the distance between them.



Figure 5-8: Raft Wars 2 drawing



Figure 5-9: Raft Wars 2 screenshot

Maria's drawing on *Dr Daisy Pet Vet* (Figure 5.10) game frame depicts mainly story elements, which refer to the game rules. Furthermore, in the drawing Maria attempts to explain the game action by stressing on characteristic game symbols, the hearts and the cross. In her oral interactive narrative, she explains her drawing choices:

1	<i>Maria: ...Here (shows a heart on the drawing), I put a heart. This means that when you put a heart on an animal, you buy it. ...</i>
2	<i>In here, there are some decorations: a toy, little fountains...and here (shows the cross on the drawing) it means that this is a hospital and these (shows the cages) are the places you keep the animals.</i>
3	<i>Researcher: What's the name of the game?</i>
4	<i>I don't know. I call it 'puppies'.</i>

Episode 15: Maria describes her drawing



Figure 5-10: Dr Daisy Pet Vet drawing



Figure 5-11: Dr Daisy Pet Vet screenshot

In Jakob's drawing on *Clash of Clans* frame (Figure 5.12) there is an emphasis on details of the game setting. Jakob had some difficulties in deciding what to draw:

1	<i>(sighs) ...But in this game you don't do anything...you can't describe it...I mean there is no specific way of playing...You do whatever you like...</i>
2	<i>I'll draw this (shows his village on the screen). I'd like to do it with a pencil. I'll do it with a pen. Well, I'm not good at drawing.</i>

Episode 16: Jakob decides on what to draw

His indecisiveness is expressed through a series of ambiguities regarding the game rules (line 1 "you do whatever you like") as well as his drawing materials (line 2). After failing in his first drawing, he managed to create the drawing of Figure 5.12 Jakob had been the only participant who referred to the game screen in order to create his drawing. A comparative look at his drawing and a game screenshot (Figure 5.13) indicates the presence of many game details.

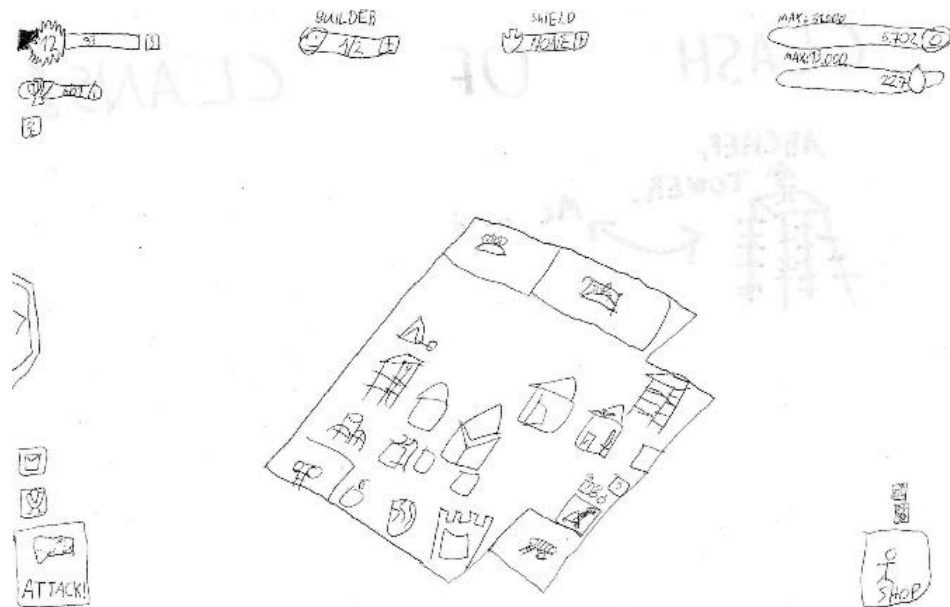


Figure 5-12: Clash of clans drawing



Figure 5-13: Clash of clans screenshot

In their drawings on game frames, children have to meet the challenge of catching games given actions and situations. In many drawings fighting is a major issue to be presented, and motion becomes a challenge to put in an image. An *Ice Age Village* drawing (Figure 5.14) clearly represents a fight scene, figuring Scrat and his fish enemies. The drawing depicts successfully a favorite frame to young players, focusing on the multiple fish and Scrat “kung fu” fighting moves. Put in words, this challenge is somehow difficult to meet:

1	<i>Manos: It is a game where you have to kill these fish (shows the fish on the drawing), and if you kill these you lose lives.</i>
2	<i>Researcher: If you don't kill them you still lose lives?</i>
3	<i>Manos: Yes. Ah! No...If you kill these (shows the blue fish) and if you leave these (shows the pink fish) to drop into the water you lose lives.</i>
4	<i>Researcher: So, there are good and bad fish...</i>
5	<i>Manos: No, these are bad too. But if you cut them, you'll end up full of thorns...</i>

Episode 17: Manos comments on his drawing.

In the above dialogue the child and the researcher are facing a conflicting situation related to the explanation of game rules through the player's drawing. Manos, a vivid young boy, is trying to explain the game rules to the researcher. His conversational style presents contextualization cues like “kill”, “lose lives” that put the talk into context (lines

1, 3). His explanations are well-turned and he uses gestures when needed. However, the rules are complicated, and Manos has to try harder. His efforts are stressed by paralinguistic features (Yes. Ah! No...line 3).



Figure 5-14: Ice Age village drawing



Figure 5-15: Ice Age village screenshot

Emphasizing on game mechanics, the player focuses on the “how” of the game and the game rituals. In this context, an important element of children’s drawings on games is the use of symbols. Symbols are either taken from the game world and put into the drawing, (see Maria’s drawing on *Pet Vet*) or created on the spot to express a notion of importance. Working on a drawing on *Dragon City* (Figure 5.16) Markos, aged 8 chose to use some MS Paint symbols in order to show the Electric Shock weapon and the enemy attack. Excited by this unexpected development, he explains his reasoning in his interactive narrative:

1	<i>Here is my dragon! An arrow! You push 'Electricity' and you have electricity! Isn't it cool? I thought 'Since I've got lightning and the arrow!' (symbols on paint) ... Normally (in the game) there are more buttons than electricity, there are many things you also push here (shows on the screen), OK, there is (information on) the life of the dragon, how many dragons the other (player) has, and what is the cost of throwing a lightning, a fist, water (means acid rain) and so on, he (the dragon) loses his life and you win.</i>
---	---

Episode 18: Markos explains his drawing

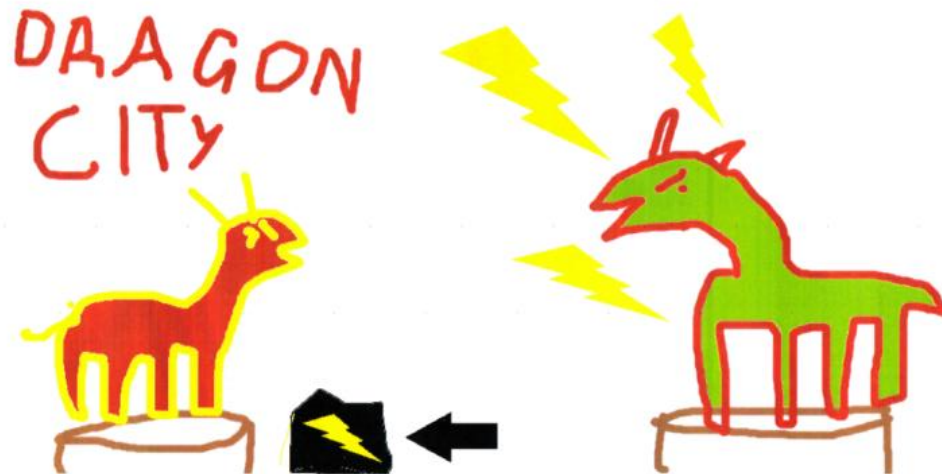


Figure 5-16: Dragon City drawing



Figure 5-17: Dragon City screenshot

In many drawings children focus on separate elements of the game frame, based on abstract thinking, leaving out many narrative elements (Juul, 2002). This is the case of Alex, a tinkering lover aged 7, who focused on critical parts of the game frame. This had been a notable characteristic in both his drawings on the *Pandalife* game world, depicting two different frames in this Greek online role-playing game for children. (Figures 5.18 a, b). In his drawings Alex successfully met the challenge of giving the gist of the game play, providing clues on how the game is played. His drawings clearly focus on the “how” of the game play, alluding to the game rules, and concentrate on what the player thinks is essential for the game development. The following dialogue was taking place while Alex was

producing his drawings, facilitating him to express his thinking. Working in Paint software, the child was having some difficulties with his task and got encouragement from the researcher.

1	<i>Alex: I'm doing the machine that pours the.. honey</i>
2	<i>Researcher: It looks good</i>
3	<i>Alex: Now, I'm going to draw a drop. Not this line, I need the other one. The curved one. Oh, Gosh! It looks terrible...</i>
4	<i>Researcher: You're doing fine</i>
5	<i>Alex: Basically, no, not. I won't put anything. Ah! I think I know what to put! Opa! Eh...how am I supposed to do it...Ah! Yes! (puts a yellow arrow looking down)...</i>
6	<i>Alex: And next, in the blank space (of the screen) I'm going to draw the other game...What's the name?</i>
7	<i>Researcher: Froutomazemata (in english: Collecting fruits)</i>
8	<i>Alex: But how am I supposed to draw grapes and the other fruits?</i>
9	<i>Researcher: What are you planning to draw?</i>
10	<i>Alex: Dropping fruits.</i>

Episode 19: Alex describes his moves

While drawing, Alex is describing his moves. His interactive narrative involves his attempts to express how he is related to the game frame. His speech is composed of questions and answers to himself (lines 5, 8), as well as replies to the researcher's questions. His speech is often interrupted by hesitation markers and other signs of discomfort and insecurity (lines 3, 5, 6).

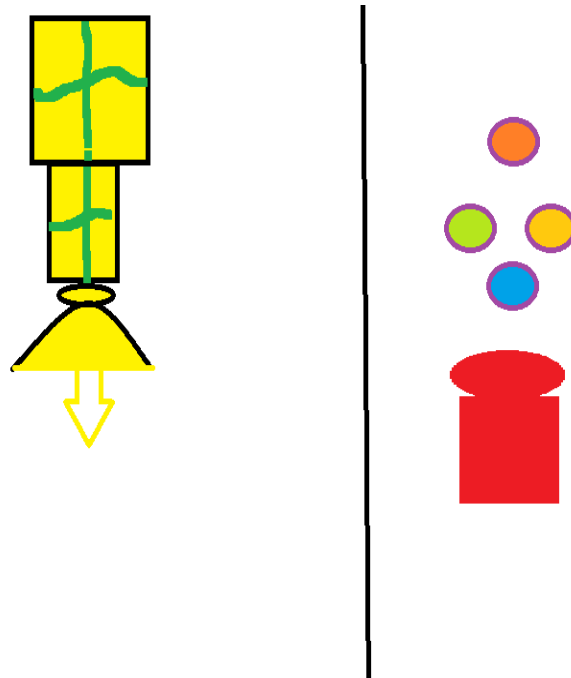


Figure 5-18a, b: Pandalife drawings

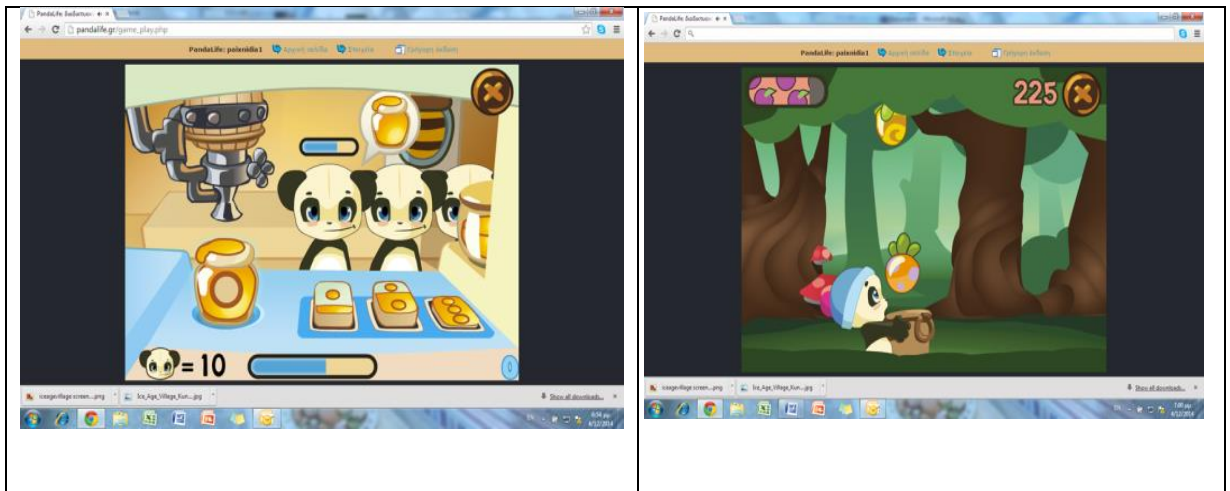


Figure 5-19a, b: Pandalife screenshots

Depicting on the game rules and clarifying the player's possible moves and actions in a game frame was a great challenge for children participants. In her effort to explain how she plays *Subway Surfers*, Vicky, a sports enthusiast aged 9, drew more than one character and added arrows showing how the character moves in the game world (Figure 5.20). Her drawing depicts game mechanics, referring to the rituals of the game frame. Her interactive narrative during her drawing supported in an effective way her drawing:

1	<i>...It's this man and with some...boots, special boots, you can jump on trains, and when there is a space, something like this, you jump on it, get on the next train and move on. You can turn one side or the other, or you can go like this (shows on the drawing), and when there is a big banner with an arrow looking down, you have to go down in order to pass from beneath. And if you like, you</i>
---	---

	<i>turn the other direction and there is another kind of banner, sometimes it says...shows you an arrow going upwards. And you have to jump upwards. That's all'.</i>
--	--

Episode 20: Vicky comments on her drawing.

Similarly, in her description Vicky provides a simple and clear explanation of the game rules and the player's possible moves. Her speech is descriptive, avoiding the use of formulaic expressions or other cues that may cause ambiguity to her interlocutor. She uses gestures when needed. In her speech, she appears to see things from two points of view: She starts out by describing the player avatar in the third person, but soon Vicky switches to the second person.



Figure 5-20: Subway surfers drawing



Figure 5-21: Subway surfers screenshot

5.4 Conclusionary points

This chapter presents the results of the first phase of the survey. Thus, children as digital game players' interactions were analyzed according to Goffman's frame theory. Frames were sought and were studied in children's oral interactive narratives and children's drawings. According to the collected data, during game play, children deal with elements of both worlds, the fictional game world and the real world. Children use frames to organize their gameplay experiences. With focus to the image of "self", children's interactions appear either in the game existing frames, or in frames that children create and are affected by the child's immediate personal and social context. These frames revolve around the connections of "self", the players' identity construction, finding relations between the player's world contexts and the game world, placing the player's fears and insecurities and expressing his/her thoughts and emotions about his/her immediate personal context. Regarding relations to others, children participants gave prominence to the creation of frames in episodes of playing with their peers, friends and family and resulted in frames of harmonious relations to disagreements and relations of dominance. The analysis of children's drawings focused on the game rituals, as they were depicted in the game frames' drawings. As a result, many drawings depicted the game rules with the aid of game mechanics elements, or other game elements like game objects and symbols. A small number of drawings depicted the game sequence, referring to the game story or to

the player's story, as well as other ritual elements referring to the beginning and the end of the game.

CHAPTER 6

Analyzing children's gameplay interactive narratives according to the theory of dialogism

As seen in previous chapters, many “children's interactive narratives” take the form of a dialogue between co-players. This dialogue takes place either in the digital game world, or in the players' physical space, and should be clarified further with the aid of dialogism theory. This chapter deals with the analysis of “children's interactive narratives of the second phase of my research. During this phase children played *Fortnite*, an online multiplayer adventure game. Their interactive narratives were analyzed according to Bakhtin's dialogism theory, with focus on four basic elements: transgression, the chronotope, heteroglossia and polyphony.

6.1 Episodes of transgression and chronotopes: Children's views on “self” and “other” in space and time

According to Bakhtin dialogism theory, the understanding of a situation is not monolithic. It is differential, determined by the perceptions of “self” and “other”. Thus, we perceive the world through the determination of our specific position in a given cognitive space and time, as well as through the space and time of the “other” (Holquist, 1990). Coined by Bakhtin (1981), the term transgression serves as the synthesis of two subjects'

perceptions of reality. In digital games transgression is strongly connected to the concept of the chronotope, namely the integration of space and time during gameplay.

In episode 5 of the previous chapter I analyzed Noah's and Vicky's gameplay on *Minecraft*, using frame analysis. However, their gameplay was also marked by the existence of a *Minecraft* construction chronotope, dealing with Noah's setting of an improvised ergodic game with Vicky. At a certain moment Vicky doubts Noah's idea and asks "Where am I going? What are you up to?" and even accuses him "You made me circle for nothing". Her perception of the game reality is different from her brother's perception. Vicky finds herself trapped in the *Minecraft* world that her brother has created. Noah's perception of the game differs, provided that he is the creator of this *Minecraft* world and the leader of the game. However, none of them possesses the absolute truth. The synthesis of the two perceptions results in the game transgression, a "holistic" view of the game reality. Effectively in this episode we observe two children – players who coexist in the game world. However, according to what players see on their screens, each player exists in his/her own chronotope and is able to see his/her coplayer's avatar. The "meeting" of the players' chronotopes is facilitated by the game world, which, in the form of simulacra or copies of the same world, appears on players' screens and hosts their interactions.

In digital games, transgression takes the form of complex dialogic relations of players, regarding their views about their existence in the game world. Similar to transgression in narratives, transgression in "children's interactive narratives" aims to provide a synthesis of players' perceptions when they confront each other in the game's

fictional world. Even further, given that players also exist in the physical world, transgression equally concerns their physical world views and identity. The following episode concerns the interplay of players' existence in the two worlds:

Apostolos and Manolis are classmates and best friends. They're 9 years old. Among other things, they love playing games together. In this episode, they are in Apostolos home and they have to share one PS4. Sharing the PS4 controller becomes the occasion to unfold some positive as well as some negative character traits of the two boys, which affect their relationship.

1	(Manolis plays Fortnite. Apostolos says that it is his turn to play.) Manolis: What? No!
2	Apostolos: Your playing time is more (than mine).
3	Manolis: No, it isn't. It's less!
4	Apostolos: No!
5	Manolis: Come on, let's make it a whole match. We can play a whole game each one.
6	Apostolos: No. (He grabs the PS4 controller). We have to play fair.
7	Manolis: But you will also play a whole match.
8	Apostolos: No one plays a whole match. (He starts playing the game)
9	Manolis: Why are you going (to) <i>Tilted</i> (Towers)?
10	Apostolos: To take it (means...) and fly.

11	Manolis: That's very good, fly!
12	Apostolos: If you want, you can play a whole match later. This will make it fair (for both of us).
	...
13	(Apostolos plays and Manolis is bored) Manolis: Take this blue thing!
14	Apostolos: Which one?
15	Manolis: (mimicking Apostolos tone of voice) Which one?
16	Apostolos: Ah...Ok!
17	Manolis: (keeps on mimicking Apostolos tone of voice) Ah... Ok!, Ah... Ok!, Ah... Ok!
18	Apostolos: Did I say something weird?
	...
19	(Apostolos keeps on playing. Manolis is getting even more bored) Apostolos: There's a rocket.
20	Manolis: This is not a rocket.
21	Apostolos: OK...you're right. (His voice tone shows dismay. He wants to finish the argument. He probably understands that he's wrong). But, do you know (what this is?)
22	Manolis: Do you know?
23	Apostolos: I asked first. You have to answer.

24	Manolis: I know. Do you know?
25	Apostolos: Then why did you say “This is not a rocket”?
26	Manolis: I know. Do you know?
27	Apostolos: Then why did you say that?
28	Manolis: OK, I don’t know. But, do <u>you</u> know? (lays emphasis on you)
29	Apostolos: No, <u>I</u> know (lays emphasis on I)
30	Manolis: OK I (also) know. You know. (Sound of shootings comes from the game world) Don’t do that. Don’t hit it with the <i>rocket</i> . You’ll make her dance.
31	Apostolos: But I saw <i>hamogelasti</i> moving. (Hamogelasti stands for a nickname given to a female Fortnite skin. It was taken after a Greek youtuber name given to this skin. Here, the kids use the same nickname.)
32	Manolis: She wasn’t moving.
33	Apostolos: But she was in the ball.
34	Manolis: But how could she be in the ball and moving at the same time?

Episode 21: Two friends argue about the game rules

According to their interactive narratives we understand that the two boys have set their own rules regarding the time each one is allowed to play. Manolis desires to break this rule and play more than agreed (lines 1, 3, 5). However, Apostolos shows determination. He even grabs the controller (line 6) in order to end this quarrel. However, later on, when Apostolos sees that Manolis abides by the rule, he softens him up. He suggests that Manolis can play a whole match later. He even seems to keep the matter “open” in order to find a fairer solution for both of them (line 12). In his interactive narrative Apostolos speech production relates to his position of strength: The two boys are in his home and share his PlayStation. He has a dominant role but he also looks for fair solutions to their sharing one PlayStation. On the contrary, Manolis speech production indicates a person who does not desire to follow the rules but finally complies. His disposition is depicted throughout the episode in different ways.

At the first part of the episode Manolis questions, denies or exhorts his friend in order to achieve his goal and keep on playing (lines 1, 3, 5). When his wish is turned down by losing the controller, he complies (line 9). In the second part Manolis is bored. His boredom is expressed by a series of textual prosodic and paralinguistic features: he is mimicking and keeps on repeating Apostolos words (lines 15, 17). In the third part, again, Manolis expresses his boredom with recurrent questions commenting on Apostolos' gameplay (lines 20, 22, 24, 26, 28, 30). In this episode contextualization cues relate to Manolis and Apostolos paralinguistic and prosodic choices: They both talk fast (lines 22-27) and in some cases they both emphasize on their own sayings (lines 28-30). Other

contextualization cues relate to the description of game world places like “Tilted” (lines 9-10) and the game avatars like “Hamogelasti”, which stands for a nickname to a *Fortnite* skin, taken after a Greek youtuber name given to this skin (line 31).

In terms of transgression, the game play reality appears to be the mixture of two opposing views: boring, according to Manolis, and fascinating according to Apostolos. Similarly, opposing results stem from the players behaviors regarding the game rules or the making the right choices in the game. In particular, according to Bakhtin consideration of transgression, “self” does not possess absolute meaning, the absolute truth of what happens in one’s own environment. The concept of “self” is relative, and its existence depends on “other” (Bakhtin, 1981; Holquist, 1990). In the case of digital games, the gameplay of the two friends constitutes the differential relation between the two sides, that is, how both, Apostolos and Manolis, experience the game. Effectively, the word “fairness” acquires a different meaning. What is “fair” for Apostolos (line 6) is not necessarily “fair” for Manolis. Each ones’ perception of what is “fair” in this gameplay is affected by the children’s environment, social norms and values. Consequently, the two children – players’ utterances on “fairness” are heteroglossic. In general, the boys’ interactions reflect a mixture of contradictory mindsets: honesty and discipline, patience and impatience, persistence and selfishness.

Mentioned in the previous chapter, jokes constitute a common game frame element. However, jokes, humor and laughs are also part of Bakhtin's conceptual apparatus. They are fundamental elements of the concept of the carnivalesque. In *Rabelais and his world*

Bakhtin (1984b) deals with the concept of carnival, by integrating humor and joyful behaviors in human interactions. Of symbolic forms, these behaviors assume a liberating role from the dominant well-ordered reality. Bakhtin links dialogism to the concept of carnival, as it provides an alternative expression of “otherness”. Through the dialogical relationship between “self” and “other”, the subject can express elements of his/her personality that do not appear in his/her everyday socially constructed image (Holquist, 1990). In this regard, as Bakhtin mentions (1981), a body is never “complete”. On the contrary, a body is constantly “re-created”, while “building and creating” another body.

In episode 22, I watched a common practice for children players of online games, that is, turning their avatars uniformly during free play. Between *Fortnite* battles, Aris and Notis invent their own “find the difference” game.

1	Aris: Let’s put on our lucky skins. Choose “Santa Claus”!
	(The two boys decide to choose the same type of guns)
2	Notis: What colors did you choose for your guns? (Aris explains in detail and then they make further changes in order to have exactly the same type and colour of guns. Next, they make their avatars appear together on screen and make them dance.)
3	Notis: Hey, look at us! We’re funny!
4	Aris: Look at our faces! (He means Santas’ face on screen. They both laugh)

Episode 22: Free play between friends

In this episode, the two boys seek to make their avatars identical. To do this, they use their computer screens as mirrors. This part of their gameplay conversation is particularly rich in intonation cues (questions and answers, in lines 1-4), code switches (eg. Santa Claus figure, types of guns). Aris and Notis gameplay alludes to Gumperz (1982) reference to social context which is embedded in talk. Equally, the players' social background knowledge is expressed in their heteroglossic narratives (Bakhtin 1981) and relates to their own friendship context, their school environment that affects their friendship, as well as their family environments and the wider online *Fortnite* community (line 1, utterance on lucky skins, line 3, utterance on being funny). Effectively, in this case, the *Fortnite* game serves as a canvas on which each one makes his "contribution" by suggesting, accepting, denying, and fighting, according to his own background and the game rules. The two avatars made identical, children take a good look of their digital selves by applying transgression. It appears that the two players deliberately create similar chronotopes (line 4). They look at each other on their screens and they realize that their new "self" greatly resembles the "other". This makes them laugh (lines 3-4).

Mentioned earlier in chapter 2, ergodic forms of engagement require "non-trivial effort" from the part of the "reader" of an ergodic text or artifact (Aarseth 1997). It is evident that there is a strong connection between ergodic forms of engagement and

cognitive effort. Ergodicity in game play relates to the players' "disposition" and "readiness to act" (Calleja, 2011). A typical example of ergodicity in game play relates to working with game world maps. In some cases, the player can see on screen only a part of the game space and needs a map to navigate in the game world. This requires the player's cognitive effort during game play, which is connected to spatial involvement, (Calleja, 2011; Wolf, 2010). During our research, there have been numerous cases of ergodic forms of engagement in the *Fortnite* game space, where players used in-game maps to locate themselves while playing, or created their own maps to organize their game strategy and communicate it to their co-players.

In episode 23 follows an interesting example of an ergodic form of engagement in terms of spatial involvement which forms chronotopes. It relates to *Fortnite* map sketches created by Notis, pointing out his mental effort to come up with a good plan (Figures 6.1 a, b). Sketches of this kind were created by Notis regardless of the research team's work. Being friends with Aris, he thought of new ways for them to win the *Fortnite* battles. He used to sketch his ideas on his school notebook and pass them to Aris at the end of the school day. Notis' sketches consist according to Garfield (2000) a form of metagame, in the sense that players are affected by games even after they have ended, or in the time between games. Besides, these sketches as ways of planning game moves, clearly require effort and constitute significant forms of ergodicity (Aarseth, 1997; Calleja, 2011). They form a complete two-page narrative which serves as a mental tool for the construction of Notis' game play reality (Bruner, 1990). This type of interactive narrative follows the

structure of a *Fortnite* battle: It starts with the battle bus ride; it continues with the landing, it makes suggestions for collaborative battle strategies and it ends with the depiction of the intended target. Notis' uses arrows to show the battle bus alternative itineraries, followed by brief comments in both Greek and English language. Through his narrative, Notis starts a dialogue with his co-player. He expresses his will to communicate his game plans and to achieve coordination towards a common goal. Effectively, in this episode Notis creates a game chronotope on a piece of paper and communicates it to his coplayer in order enhance their "self" - "other" relationship. As already discussed in chapter 4, this dialogue crosses multiple children's social contexts. It begins in the context of the home-based workshop, having the game play as a starting point, and continues outside the game, in the school setting, where Notis makes his sketches, and passes them to Aris. We expect this dialogue to continue in the context of the home-based workshop, during the *Fortnite* gameplay. The case of Notis sketches on his game plans is in accordance to Bakhtin theory of dialogism (Holquist, 1990), where dialogue is grounded in the social relations between individuals, as each individual perceives what is happening in relation to two distinct concepts: "self" and "other". Thus, an utterance is a response to something that preceded it, and in turn is to be followed by another utterance-response that concerns the two individuals – in this case - the two children. According to Bakhtin, a dialogue may take place in the context of linguistic or non-linguistic communication. Children's communication through these drawings combines both.

The reading of the above ergodic sketches is based on semiotic sequences and is not linear (Aarseth, 1997). It incorporates the reading of symbols, language texts and maps. Reading Notis' drawings requires the reader to assume an active role, and become familiar both, with the concept of space on the paper sketches, as well as with the game space to which the drawings refer.

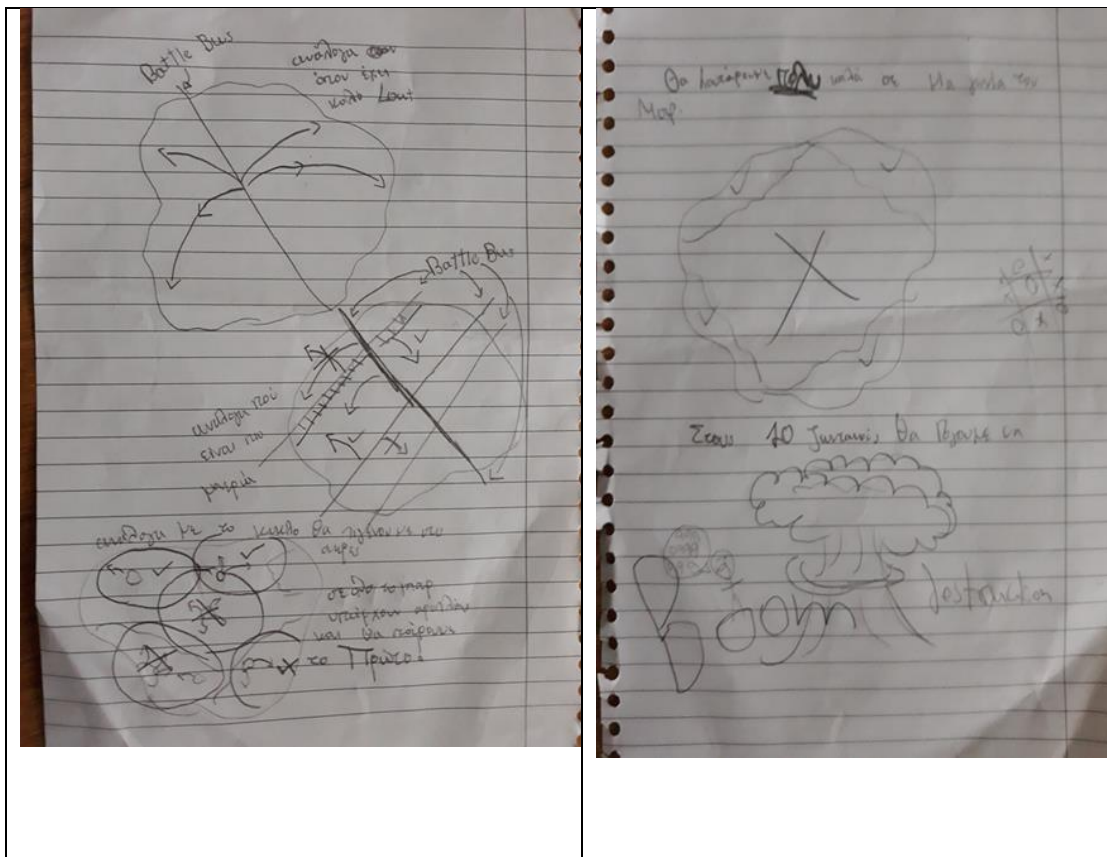


Figure 6-1 a, b: Fortnite map sketches

6.2 Episodes of polyphony and heteroglossia: Emergence of children's multiple voices during gameplay

As mentioned earlier in chapter 3, polyphony and heteroglossia are complementary elements of dialogism, based on the collective quality of an individual utterance and the diversity of voices that reflect the player's contexts. According to Bakhtin (1981), in polyphony and heteroglossia there is a "layering of voices within one voice". A characteristic example of polyphony and heteroglossia is met in the novel, where the writer "embeds voices within voices" and sets a dialogue among them (Park-Fuller, 1986). In digital games, these two elements highlight the different perspectives in the relations between players in the real and the fictional game world, and incorporate a multitude of influences from the different contexts that affect children – players' interactions.

In episode 24, Aris and Nick are classmates. They're 12 years old. They both love playing *Fortnite*. In this session both players are in their homes. The first and the second part of the episode depict the beginning and the end of a *Fortnite* game. They also reflect a slight disagreement between them about their game strategy, as well the way they deal with being eliminated in the game. It should be noted that research data was collected through Aris' computer screen. Thus, data collection concerned mainly Aris' avatar, which figured on screen, whereas sometimes, Nicks' avatar also appeared, being close to Aris' avatar in the game world. Thus, I was able to hear both players through Aris' computer and saw things "through his eyes", or better, "through his screen". Consequently, Aris' speech production is central to this point of my study, whereas Nick has a rather peripheral role

(lines 9-10 where Aris' avatar gets killed, whereas his friend seems to be elsewhere in the game world and is not responding.)

1	Nick: Ah <i>Pleasant</i> (means Pleasant Park)
2	Aris: Ah (You're) fine! Great! I was thinking about taking Yanouba's trail (note: Yanouba is a famous Greek youtuber who plays Fortnite on youtube) but...
3	Nick: Better not...I'm a little bit fed up with this trail...
4	Aris: Yeah. Me too.
5	Nick: I've got the "psychological "backpack (note: It stands for the gingerbread man backpack, an item that can be purchased with the Fortnite game currency. They call it a psychological backpack because it screams when its owner falls from the sky. They probably meant "psychic".)
6	Aris: (You're) Great, yeah, yeah (They both laugh) You've been thinking (that I would probably wonder) if something happened to me (That's why I scream).
7	Nick: Yeah
	...
8	Aris: So, I <i>camp</i> in a house like a half-wit. Hey, where are you? Where are you?

	(An airplane appears on screen. Someone shoots A)
9	Aris: Hey! It (the airplane) is shooting at me! He's a <i>noob</i> !... Hey! Hey! (shooting noise) (On screen, the avatar of A falls down).
10	Nick: What?

Episode 24: Online gameplay between two friends

Code-switching between two languages has been a topic of particular interest in linguistics. In her analysis of bilingual conversations Γεωργαλίδου (2014) quoted Mackey (1962) which argued that switching languages while speaking is a characteristic of language in use, meaning that it concerns speech (parole) and not the domain of discourse (langue). Thus, starting from the context in which a conversation takes place, interactional sociolinguistics encounters switching languages as an expression of youth culture codes (Γεωργαλίδου, 2014). In this respect, the instantaneous switching of the reference code, namely the base language, with another language, was studied by Auer (2005) emphasizing the casual character of these alternations based on the value systems of the community of interlocutors.

During the digital gameplay, Greek children tend to use either foreign words that are part of digital games' terminology, or informal words constructed with English and Greek elements. In this episode, the players' base language (Greek) is alternated with informal words constructed with English elements and Greek endings. It should be

mentioned that both episode protagonists know that these words are usually used by a famous Youtuber. More specifically, Aris uses the Youtuber's way of speaking. According to Bakhtin's theory, Aris' utterances are socially directed and host a synthesis of voices (Bakhtin, 1981). With focus to how the truth of the speaker is expressed, Aris' discourse is characterized by polyphony, the simultaneous voices of the child – player and the youtuber's way of speaking.

In this episode, the game starts with a little awkwardness (lines 1-3). The two players have to decide on how to cooperate in the game. The presence of formulaic expressions and code switches in lines 1, 2, 5, 8, 9 indicate that the players' communication is largely based on the gameplay. In an attempt to show that he is an experienced player, Aris alludes to a famous Greek youtuber who plays *Fortnight* (Yanuba). Similarly, in the second part Aris mimics the accent of Yanuba and other Greek youtubers. He also uses Greek game slang words “καμπερόνομαι” (translated as *camp*) and “νουμπάς” (translated as *noob*) (lines 8, 9). Specifically, “καμπερόνομαι” comes from the English word “camper”. A camper is a gamer who sits in one place and waits for the opponent to appear. This strategy is known as camping and is a negative loaded term in competitive games, because it requires little effort and skills from the player. As for the word “νουμπάς”, it comes from the English word “newbie”, indicating a new person in a community group or a video game. A short form of newbie, the word noob is a slang term to describe a new online player with little experience in online games. Being a noob usually means a bad player, or someone who does not know the rules of a community. The above indicate that

Aris appropriates the speech pattern of the Greek youtuber, and associates himself with Yanuba's thinking. Aris' utterances show the existence of a heteroglossic dialogue which enables him to strengthen his social presence and status as digital player. In episode 25 Apostolos is sitting in front of the screen. He is holding his PS4 controller. He is wearing his headsets. On the screen, he can see his friends. They are standing in the game lobby, waiting for the party to begin. Christos is dancing, Manos and Pavlos are jumping up and down. Manolis is making circles Jimmy and Aggelos are riding their tiny cars. As time passes, they are all eager to start the game.

1	<i>(Apostolos shows on the screen the list with the names of all his friends participating in his party. He reads their names)</i> Christos, Manos, Pavlos, Jimmy, Manolis, Nick, Aggelos, Alex.... and me. All these people are here <i>(says, feeling proud. He shows his friends' avatars in the Fortnite lobby.)...</i>
2	Nick: Who is the guy in superhero skin ?
3	<i>(Apostolos doesn't recognize the superhero avatar.)</i> Who is this?... I don't know him...
4	Manolis: I hear (your voices) double. Someone has problems with his microphone. I'm leaving the party.

5	Hey, don't leave the party... We all hear double. Don't leave...OK guys, there is a stranger in our party. I muted him. You must all mute him. ...
6	<i>(Players separated into four teams. Apostolos, Aris and Manolis formed a team).</i> Apostolos: Can someone pass me the gold scar?
7	Aris: No, (I can't). I've got good aim (with the scar).
8	Manolis: Hey guys, they push us, HURRY UP!
9	Apostolos: I got hit... Can someone pass me a medkit?
10	Christos (forming another team with Pavlos and Manos): Hey, guys, I took Apostolos very low. Let's push them (to push Apostolos team)!'
11	Manos: Guys, get highground, so that we can beat them!
12	Pavlos: Manos wants us to get highground, but no, I (disagree).... I just killed Manolis! Let's move closer (to Manolis' team)!

Episode 25: A Fortnite party.

In this episode Apostolos is the *Fortnite* party leader. He has created a new *Fortnite* game world and he has invited his friends to join his party. He feels very happy that all his *Fortnite* friends accepted his invitation. On his screen, he can see the lobby and the players' avatars waiting for the game to begin. Apostolos' avatar is in the lobby too, together with

the other players. However, in real life Apostolos, as well as his friends are apart, playing from home. Given that during *Fortnite* gameplay innumerable digital copies of the game map are created, each player has his/her own copy of the exact game world. As a result, all players interact within these online identical copies of the game world. Players' interactions take the form of spatial relationships, which are also conditioned by time, are related to the game narrative and are open to a series of social dimensions. However, all the above are different for every single player, for they are conditioned by his/her own perspective. The synthesis of all these game spaces accomplished through players' simultaneous existence and utterances in the game space result in the game polyphony (see chapter 3).



Figure 6-2: A Fortnite party

Effectively, acting as the party leader Apostolos is counting the party participants (line 1) feeling proud and assuming the responsibility to run the game party. When a stranger interferes in his party, he takes control of the situation. He informs his co-players about the adjustments to be done (line 3) in the game world. His state of mind is expressed by a series linguistic (choice of the English word “mute” in line 3), prosodic (voice intonation in lines 1, 2, 3) and paralinguistic (pauses in lines 1,2) contextualization cues. Throughout this excerpt, the differential relations concern the dipole of being a part of a team and the outsider (the stranger, the “other”). These dialogic relations between players carry the social character of digital games and result in the formation of meanings of belonging to a group. The episode equally provides a case of polyphony: In lines 11- 12, Pavlos reports Manos’ order, and at the same time dissociates himself from him by giving new directions to his group. Finally, the use of English *Fortnite* vocabulary some players showcases heteroglossia, with the aim to strengthen children’s digital game player status (lines 2, 5, 6, 11, 12).

In episode 26 I introduce two brothers, Aris and Apostolos. Being older and experienced in this game, Aris has been showing Apostolos how to play. The session is taking place in their living room. Aris, aged 12, plays *Fortnite* on his gaming PC (Figure 6.3), whereas Apostolos, aged 9, plays *Fortnite* on his brother PlayStation (Figure 6.4). The *Fortnite* platform affords gameplay between players with different types of equipment. In this session, the two boys are trying to come to an agreement over the type of game play

that they are about to begin. Aris assumes a dominant role. He wants to be the one who decides. However, his little brother has another mind about that. The excerpt concerns the beginning of their game play.

1	<i>Aris: Let's do a fight, medium range...We'll do a sniper fight.</i>
	<i>(Apostolos doesn't collaborate)</i>
2	<i>Aris: Apostolos, we don't play build fight. We play in a sniper fight! (says with a stern voice).</i>
3	<i>Apostolos: Can we also build?</i>
4	<i>Aris: You want to do build fight? We'll do build fight then (says with conviction). It's the same thing. Now, come to the ladder. Go up the ladder! (says in an authoritative manner).</i>

Episode 26: Dominance relations between brothers

The episode excerpt is rich in contextualization cues of code switching (lines 1-4). Evidently, Aris feels that the use of the game vocabulary is indicative of his supremacy in the game. Aris' intonation is another element of his dominant mood (line 2). It appears that his dominance mood develops in two phases. First, he suggests playing in a sniper fight. When his suggestion is denied, he harks back. He accepts to play build fight, but he orders his brother to go to a specific place of the game world. To make sure that his brother will

follow his directions, he repeats his order in an authoritative way (line 4). Aris' order in line 4 marks the beginning of a game of doubtful advancement. Interestingly, Apostolos coming to the ladder means that he is crossing over the game digital boundary (see chapter 1). From now on, both players will be present in two worlds simultaneously. Apart from being in the same room, they will also meet in the fictional world of *Fortnite*. As for the ladder, it may cause confusion, as it does not exist in the real world, but in the fictional one. (line 4: *Now, come to the ladder. Go up the ladder!*)

Children's gameplay interactions are characterized by polyphony. Effectively, the beginning of a gameplay marks the beginning of a dialogue between the player's "self" and a multiplicity of "others", may these be co-players or brothers. Through their interactive narratives I detect two voices, the voice of the player and the voice of the brother. Specifically, in lines 2, 4 Aris' speech is clearly the speech of the "older", "dominant" brother, and not the speech of a friendly co-player. Accordingly, Apostolos appears as a new player who asks for advice (line 3) and as the "little" brother who does not collaborate. As a result, apart from the player's existence in the fictional contexts of digital game worlds, meaning making is greatly shaped by the player's real-life contexts. Children players appear to maintain their virtues and defects of the real world. They even bring their interpersonal relations' qualities to the fictional game world.



Figure 6-3: Players' presence in two worlds simultaneously. Aris



Figure 6-4: Players' presence in two worlds simultaneously. Apostolos

6.3 Conclusionary points

This chapter presents the results of the second phase of the survey on communication between children - players. To this, *Fortnite* online multiplayer game was selected, offering opportunities for interaction among players. Children's free game play was observed in the context of an after-school home-based activity. The results of this phase confirmed the development of dialogic relations among children players, which were based on children's utterances in their narratives. Interactions between children players were of dialogic nature and carried children's social contexts. To this, the collected data of this phase were analyzed mainly according to Mikhail Bakhtin dialogism theory. Applying Bakhtin dialogism theory to digital games focused on four basic elements: transgredience and chronotope, polyphony and heteroglossia. The exploration of children – players' interactions suggested that in online multiplayer games, players coexist in the game world, which appears in their screens in the form of simulacra. What a player sees on his/her screen forms his/her own chronotope. The meeting of the players' chronotopes leads to transgredience, namely the synthesis of players' perceptions of the game reality. The analysis of the selected gameplay episodes gave prominence to the role of the children's social norms and relations, expressed in their utterances as polyphony or heteroglossia. During this phase, dialogical relations amongst digital players embodied and involved ergodic forms of engagement.

CHAPTER 7

Conclusions: reflections, limitations and future research

This thesis aimed to explore how the narrative and the interactive elements are interrelated into one unit that we address here as “children’s interactive narratives”, meaning that the children’s narratives result from interactions that take place between young digital players. Specifically, the research inquired about how the concepts of interaction and of narrative are theorized and how these can be revisited through Goffman’s frame theory and Bakhtin’s dialogic theory in children’s digital gameplay. The theoretical work of the research focused on the study of the different manifestations of young players’ interactions and how they are reflected in their narratives. The empirical part of the research was enacted in two different contexts, a school workshop and an after-school home-based activity. Realized in two phases, the study investigated “children’s interactive narratives”, with the aid of two methodological perspectives: In phase one, Goffman frame theory focused on tracing children’s interactions during gameplay viewing play as the object of micro-sociology. In phase two, the study investigated the type of relations children as digital players develop, and how they are depicted in their narratives, by applying Bakhtin dialogic theory. This final chapter includes the contributions of the thesis, reflections on theory and methodology, recommendations for digital games’ use as educative experiences and recommendations for further research.

7.1 Conclusions

7.1.1 Portraying children's digital game experiences: "Children's interactive narratives"

The first conclusion of the thesis relates to Ryan's remarks on the need to expand the "toolbox" of narratology in order to "embrace" the study of game narratives (2022, p.6). As seen in chapter 2, so far, player interactions have not been sufficiently studied. Equally, little research has been done regarding children as digital players' game narratives.

According to my research, based on their game interactions, children have the tendency to create their own narratives, which refer to the expression of their experience in the game space (chapter 2). These narratives regard either the players' interaction with the game environment or the communication with other players, or even people who belong to their physical space. Therefore, the term "children's interactive narratives" is offered (chapter 2) to describe the narratives that children create based on their game experiences. Children's interactive narratives are of an ongoing nature, and they usually evolve in parallel with the course of the game. They serve as a communication vehicle among players, based on their face to face, or from distance gameplay interactions. Children's interactive narratives may also be recorded and shared between players with the aid of game – related digital tools like *Discord* chat app. Children's interactive narratives can take a multitude of forms: verbal, nonverbal, or written. My research focused on children's interactive narratives that take the form of verbal interactions (children's oral discussions

and interviews about their gameplay) and nonverbal interactions (children's drawings). However, depending on the different games' characteristics and the respective players' game experiences, written interactive narratives are useful to illustrate children's interactions in cases of text adventure games or participation in game forums.

7.1.2 Organising gameplay experiences: Creating frames to connect the fictional and the real world

Playing digital games entails coping with two, or at least two worlds, the game's fictional world, and the real world in which children live. As seen in chapter 1, digital games' boundaries are hard to trace and turn out to be permeable. Exploring children's gameplay interactions refers not only to how children cope with these two distinct worlds, but it also concerns how they deal with border cases of the game as "magic circle". Thus, to explore children's interactions during gameplay, it is important to look into the various contexts that constitute children's real world and their interrelations to digital environments.

The second conclusion of the thesis considers the interactions amongst children as digital game players by investigating children's real-world social contexts and their connection to the fictional game world contexts. These investigations were realized according to Goffman frame theory. As discussed in chapter 2, up to now, little research has been made on children's gameplay interaction patterns (Walkerdine, 2007; Steinkuehler, 2006; Ito et al, 2009). Even fewer researchers pinpoint the importance of

children's social contexts in the development of "media ecologies" (Ito et al, 2009). Research with Greek children aged 7 to 12, from the Athens urban area, indicates that children deal with multiple personal and social contexts that are depicted in their gameplay (see chapter 4). Specifically, these contexts relate to the children's immediate personal contexts like home and extended family, and immediate social contexts like school, neighborhood, extra-curricular activities and various digital environments and communities, as well as the wider social context. Oscillating between the real world and the fictional, the digital game constitutes a "negotiable boundary" (Juul, 2008) and fosters the transfer of real-world elements to the digital game space. As a result, children tend to transfer elements of their real-life contexts, through their interactive narratives.

Goffman frame theory was selected as a methodological solution that enables the study of children's digital gameplay interactions (chapter 3). Goffman's theory recognises play as a key element in microsociology of everyday life. Thus, the interpretation of children's game interactions according to frames considers that children use frames to organize their gameplay experiences that relate not only to the fictional game world, but to the real world as well. According to our research, players' frames concerned the children's image of "self" in cases of identity construction, communicating the players' fears and insecurities or expressing thoughts and emotions about their immediate personal and social contexts. Other frames regarded the players' relations to others and concerned episodes of playing with peers, friends and family. These episodes were connected to frames of harmonious relations, disagreements and relations of dominance. Frame creation emerged

as a process interrelated to gameplay interactions, challenged by the children's need to discover themselves and to be socially positioned in personal and social contexts, through friendships and relations with family members. Digital gameplay provided opportunities for children to play roles, to follow rules and to choose to conform or differentiate themselves from their peers, whether they were friends, classmates or family members.

Apart from the oral children's interactive narratives, the analysis of children's drawings on game frames focused on game rituals, namely the game rules and the game sequence. The analysis demonstrated that children as players experience the digital game rituals in many ways. Thus, children depicted the game rules with the aid of game mechanics, by sketching the player's possible moves and actions, and other game elements like objects and symbols. To depict the game sequence, children made sketches of the game story or the player's story, and the beginning and the end of the game.

7.1.3 Interactions amongst children as digital players: Dialogic and social nature

The third conclusion of the thesis concerns the narrative connections to children's gameplay. Based on the term "children's interactive narratives" this thesis acknowledges the narrative character of children's game interactions. As seen in chapter 3, Bakhtin dialogic theory was discussed as an appropriate theory to focus on children's language use and to support our ethnographic enquiry. According to Bakhtin's theory, in their interactive narratives children develop dialogic relations, based on an exchange of utterances, one responding to another, affected by social norms and relations. During gameplay, children's

utterances express their gameplay experiences, but also showcase children's multiple or inner voices, which originate from the children's social contexts. Thus, polyphony regards the collective quality of an individual player utterance. It is detected in cases of co-players who happen to be brothers, therefore their interactive narratives reflect the voices of digital game players who form a team in order to play *Fortnite*, and the voices of the big and the little brother who disagree and quarrel (chapter 6). Equally, the children's unanimous enthusiasm at the beginning of an online game party constitutes polyphony (chapter 6). Other cases of children's multiple voices during gameplay concern heteroglossia, namely a diversity of voices that reflect society's diversity and result in the speaker's differentiation of world views. Heteroglossia was detected in cases of children adopting a youtuber's way of speaking to describe their game experiences, or children who did not follow the instructions given to them by the team leader or broke away from the game team (chapter 6).

In online multiplayer games children coexist in the game world. This coexistence is based on the formation of innumerable digital copies of the same game world (simulacra). Thus, each player sees on his/her screen his/her own chronotope, and copes with "self" and "other" entities that exist in that chronotope simultaneously, engaging them in a dialogue of discovery for the player and his co-player. The meeting of different players' chronotopes leads to the synthesis of the players' perceptions of the game reality (transgression).

7.2 Reflections on theory and methodology

In this research study, two main theories were selected as methodological perspectives for the analysis of children's interactions during game play. Goffman's frame analysis and Bakhtin's dialogical theory.

Specifically, the frame theory enabled an ethnographic view on children's play, through players' language use, depicting their game interactions. Thus, framing was considered an ongoing process of data interpretation that takes place during gameplay and is enhanced by the social character of digital games. Founded on Goffman's work on frames for the interpretation of events and human experiences (1974), as well as Goffman's study on play as an object of micro-sociology of everyday life (1961), my approach on frame analysis was based on three basic elements in game frames: rituals, image of "self", relations to others. Frame analysis of children's interactions was further enhanced by subsequent approaches of the use of frames to digital games. In this respect, I also encountered Interactional Sociolinguistics, to discuss children's conversational exchanges and to provide a tool for children's utterance analysis (Gumperz, 1982), as well as Contextual Game Experience Model, which regards the analysis of digital game players' experiences with the use of contextual layers or frames. (Mayra, 2007). Frame analysis of children's interactions was assisted by the analysis of their drawings on different game frames, which provided useful data on the depiction of game rituals.

The second methodological perspective selected was Bakhtin's dialogical theory. According to my research dialogic relations were developed in the cases of children game

play with peers, friends or family members. In the above cases, game play interactions also involved children's social contexts, a "sine qua non" factor for the existence of dialogism (Holquist, 1990) (Bakhtin, 1981). Similar to Bakhtin's literary worlds, game worlds constitute unities of space and time where the game events happen, as interactive actions and mechanisms. In this context, the application of dialogism theory to digital games, focused on four basic elements: transgression and chronotope, polyphony and heteroglossia. The existence of these four elements conforms with digital game design, in terms of presenting a diversity of voices that reflect the player's social context, and provide the different perspectives in the relations of players.

The two theoretical perspectives share a detailed look at the child as game player and in relation to his/her environment. Furthermore, frames and dialogism can be applied in the analysis of children – players' interactions on the basis of their language choices. Although considered complementary (Roth – Gordon, 2021; Cresswell & Hawn, 2012, Scheibenzuber et al, 2023), so far these theories have not been applied to the study of children as digital players. However, in the context of frame theory, the focus on interaction concerns how players deal with different social contexts, whereas in the theory of dialogism, the discussion of interaction is strongly connected to the dialogic relations between players.

7.3 Difficulties and limitations

This research study aimed to collect and analyze data on children as digital players' interactions, a group that, so far, has scantily been within the scope of digital game research (chapter 4). Although an effort was made to include a wider range of participants (socioeconomic level, residential areas girl-boy ratio), this was not possible in the present study. Specifically, coming from a private school in the southern suburbs of Attica, the participants of the school workshop were middle-class children of high socio-economic means. However, in the home-based activity participants came from different areas of Attica and varied in terms of socio-economic profile.

The number of girls was much less than the number of boys (5 girls, 25 boys), therefore it cannot generate a representative sample. However, it is indicative of the girls' gameplay interactions for the specific age range (see chapter 4). According to the data collected, girls showed interest to a variety of digital games, from dress up games for girls to puzzle games, adventure games and sandbox games. Girls showed a willingness to cooperate with the boys of their group, but preferred to play games either with their brother or the other girls of the group. In the school workshop the girls banded together and asked to play the games on the same computer, contrary to the boys who had the tendency to play games separately. Finally, girls' drawings, captured game rituals in a very interesting way, emphasizing on game mechanics and game story elements.

There were also limitations regarding video recording of children during game play, caused either by the school rules, in the school workshop, or by some parents who did not

give their consent to do so, in the home-based activity. The absence of children videos led to partial collection of children's physical moves, gestures and facial expressions, which was conducted through participant observation and the researcher diary. In all respects, the conducted research focused mainly on the recordings of children's voices, game play screen recordings, as well as children's game artifacts, which were shared with the researcher. As the research focused mainly on children's narratives about their gameplay, the lack of children videos did not much affect the effectiveness of the collected data.

The selection of games also posed limitations. During the first phase of the research, children were encouraged to suggest games to include in our workshops. Although this enhanced their interest for participation, encompassing different digital game categories complicated the data analysis. However, during the iterative process of collection and analysis, recurring codes and categories led to substantial findings regarding the associations between children's social environment and gameplay environments. In the second phase of the research the focus on a specific online multiplayer game, facilitated the analysis of cases of dialogism in children's game play.

The above limitations could probably be dealt with, in future research, involving a broad sample coming from different areas of Attica, and including school workshops in state as well as in private schools. Future research should also consider the impact of different digital game titles and/or categories in the collection and data analysis.

7.4 Recommendations for digital games' use as educative experiences

The present study focuses mainly on the verbal interactions of children playing digital games. Thus, findings are mostly related to orality and the use of children's imaginary discourse, connected to informal education. Further development of written language in formal education based on digital game play and the connection between informal and formal education, as in the study by Voulgari & Yannakakis (2019) and Κίργινας (2020), will be addressed in future research. However, although this study deals with the topic of entertainment games, it touches on some aspects that make digital games potential educational tools. Therefore, it should be investigated whether formal curricula could benefit from the following game aspects that suggest educative experiences:

Digital games support a wide range of multiple literacies, which the player must handle in order to play the game successfully. These literacies correspond to visual, aural, gestural, spatial and linguistic modes of communication and could provide important competences for children in the future (Kalantzis & Cope, 2012). Hence, possible recommendations would consider digital games as a tool to teach some of the above literacies that are closely related to digital media.

By design, digital games implement procedural rhetoric (Bogost, 2007), namely a series of rule-based digital interactions which form the game processes. Among other functions of procedural rhetoric, its' educative use is apparent at the beginning of the gameplay, where the child is introduced to the game rules through hands-on gradually

assigned tasks. Similarly, through the game processes the child is persuaded to follow the rules and learn new strategies, so that he/she will be able win the game.

Equally, digital games favor the development of ergodic forms of “reading” (Aarseth, 1997), meaning that to access a text the player has to make a particular effort, which differs from the “traditional” reading. It relates to a set of rules of “non - trivial” effort that are usually contained in the text itself. Thus, the child interacts with the digital game environment by choosing different “paths” during his/her “reading” process. Consequently, digital games provide challenging opportunities for ergodic forms of reading online maps and situating in space, analyzing and interpreting messages, creating digital artifacts etc.

7.5 Recommendations and future research directions

The above discussions could provide the basis for recommendations regarding the relation of narrative and interactive, as well as further research topics on children’s digital game play.

First, the term “children’s interactive narratives” was introduced to describe the narratives that result from the interactions of children as game players (chapter 2). However, the continuous advancements in digital gaming will possibly affect “children’s interactive narratives”, by giving birth to multiple sub-categories of narratives (Σαντορινάιος, 2023), or even radically changing the form of “children’s interactive narratives”. It would be interesting to keep track of these developments.

According to the current research, the magic circle theory can be applied to digital games. However, setting boundaries between the “real” and the “fictional” is a point of controversy. Therefore, further research should focus on the evolution of the magic circle theory, and the investigation of the existence of multiple recurrent cycles (a pictorial cycle, a narrative cycle, an invisible cycle which supports the paths of the digital game, etc.), where a network of relationships can be observed. Accordingly, building on Bakhtin's theory, research should consider the role of the chronotope in these cycles of children's play.

Third, according to the research findings, children as game players cope with game boundaries and tend to transfer real – world elements to the digital game world (chapter 5). Yet, this study does not include evidence regarding the transfer of game elements to children's real-world contexts which should be investigated further.

Fourth, the current study suggests that, in order to organize their game experiences, children create frames that connect the fictional game world and the real world (chapter 5). Still, it should be investigated by what processes children create frames of their experiences with digital games. How does the social environment influence children's ways of understanding?

Fifth, with reference to the application of Bakhtin dialogic theory to digital games, my argument lies in the existence of dialogic elements in digital game worlds, both in the case of the game story, as well as in player narratives of their game play (chapter 3). Given that my research findings concerned mainly the study of dialogism in player narratives, it

would be useful to study further the application of Bakhtin dialogic theory to the game narrative texts. The study results would probably support my claims on making associations between the novel and the digital game on the basis of their ongoing nature and favor of new forms of perception (chapter 3).

Sixth, the analysis of children's drawings not only provided useful information regarding how they experience their game interactions, but, also brought out clues on how children perceive the game world. Thus, some children chose a more descriptive way of depicting the game frames, whereas others adopted abstract ways of depiction (Gavrielidou & Chronaki, 2016). It would be interesting to associate these two types of children drawings to specific game elements (Schell, 2008), such as an emphasis on the narrative element for the descriptive and an emphasis on the game mechanics for the abstract type of drawings. Equally, further research should consider how children's drawings feed dialogicality.

Finally, with regard to the existence of rituals in digital gameplay, future research could explore their application in other environments or age groups. Specifically, research could focus on individuals who have little or no experience of digital games, like elderly people.

7.6 Some final remarks

This research study informs us about the possible connections between digital games and children's social contexts. Effectively, during gameplay children transfer elements of

their real - life contexts to the fictional game world. By introducing the term “children’s interactive narratives” the study focuses on game narratives created by young players, a field that, so far, has not been thoroughly studied. Thus, the study showcases children’s desires for digital games through their own narratives, according to their gameplay interactions. The study also seeks to create bridges between the school and home, two immediate personal contexts of children, on the basis of digital games, and makes recommendations for digital games as educative experiences.

APPENDIX A Games children played in the two phases of the research

Game Title	Company	Description/Url
Minecraft (Creative mode)	Mojang Studios	Sandbox game where players explore an infinite blocky 3D world, discover raw materials, create tools and make constructions. Players also fight, cooperate and compete. https://www.minecraft.net/en-us
Fortnite (Battle royale)	Epic Games	Player-versus-player game for up to 100 players. Players can play alone, in a duo, or in a squad. Weaponless players airdrop to the game land and scavenge for weapons and resources. Players fight, construct, cooperate and compete. The last player, duo or squad remaining is the winner. https://www.epicgames.com/fortnite/en-US/home
Clash of Clans	Supercell	Strategy game where players build their own village using resources gained from attacking other player's villages with troops. Players also create clans, cooperate and compete.

		https://supercell.com/en/games/clashofclans/
Clash Royale	Supercell	Strategy game combining elements from collectible card games and multiplayer online games. Players construct decks of cards and use them in order to destroy the opponents' towers. https://supercell.com/en/games/clashroyale/
Pandalife	Sidebar	Greek online multiplayer game for children. Players explore a panda island, play mini games and communicate with other players. http://pandalife.gr/press.php
Subway Surfers	Kiloo, SYBO Games	An endless runner mobile game, where the player is chased on a subway. The player has to avoid crashing into the obstacles on his way. https://sybogames.com/subway-surfers/
Ice Age Village	Behavior Interactive	A game based on the "Ice Age" movies. The player takes control of the film's main characters, plays mini games and collects nuts. https://www.bhvr.com/games/
Friv Games (Bob the robber, Raftwars, Dr	Friv	Free online game network. Various easy-to-play family-friendly games.

Daizy Pet vet, Dragon city, Papa Louie, Fireboy & Watgirl, Soccer Online, Bubblesooter)		https://friv.com
Stardoll	Glorious Games	A virtual community site on fashion. Players create their virtual doll and use in-game currency to purchase clothing and beauty items from the game's virtual shop. www.stardoll.com
Fruit Ninja	Halfbrick	An arcade single-player or multiplayer game. The player slices fruit with a blade controlled via the touch screen. Extra points are awarded when slicing multiple fruits, or avoiding bombs. https://fruitninja.fandom.com/
Wii (Wii Sports, Mario Kart)	Nintendo	Single-player or multiplayer simulation games, played on home video game console Wii. The gameplay incorporates the player's physical movements. In Wii Sports games, the game controller is used in order to throw or to hit the ball or as a blade for fencing.

		https://nintendo.com
--	--	---

APPENDIX B Symbols for Discourse Transcription

Meaning	Symbol	Comments
Unit		
Word	SPACE	Space before and after marks word
intonation unit	LINE	Several intonation units may be placed on one line
Participation		
speaker attribution	ALEX:	Colon follows name in CAPS
Pause		
pause not related to game play	...	Duration of pauses not transcribed as players tend to make smaller or longer pauses while playing
pause related to pause in game play	.../...	Duration of pauses not transcribed as players tend to make smaller or longer pauses while playing
prosodic lengthening	:	Colon marks slowing of local tempo
Sequence		
Speech overlap	[]	Square brackets indicating beginning and ending of overlap between the utterances of two speakers

Closure		
terminative	.	Intonation morpheme signaling finality (period)
continuative	,	Intonation morpheme signaling continuation (comma)
Truncated intonation unit	--	Aborting intonation unit (double hyphen)
Dysfluency		
Truncated/cut-off word	wor-	Aborting projected word (single hyphen)
Vocalisms		
breath (in)	(H)	Audible inhalation
Exhale	(Hx)	Audible exhalation
Laugh	@	Laughter before, after or during word
vocalism	(COUGH)	Nonverbal noises. Various notations (SNIFF) etc
Manner		
Loudness: Forte-Loud	<F F>	Angle-bracket pair used to enclose a stretch of forte speech
Loudness: Piano-Soft	<P P>	Angle-bracket pair used to enclose a stretch of piano speech

Loudness: crescendo- gradually louder	<CR CR>	Angle-bracket pair used to enclose a stretch of crescendo speech
Loudness: diminuendo- gradually softer	<DIM DIM>	Angle-bracket pair used to enclose a stretch of diminuendo speech
Manner various	<MISC>	Various notations for manner of speaking
Vox	<VOX>	Voice of another
Metatranscription		
Player interaction	(PI1)	The players/the player(s) and the researcher are in the same physical space
Player interaction	(PI2)	The players are in different physical spaces
Game equipment/digital technologies	<PS4>	Various notations <PC>, <SMARTPHONE> etc
Code Switching: Use of English words while speaking in Greek	<LENG>	The English word is noted in text
Code Switching: Use of Greek game slang words	<LGRSLG>	The Greek slang word is noted in text
unintelligible	###	One symbol per syllable

uncertain	#you're #kidding	Transcribed words are uncertain
comment	((WORD))	Researcher's comments on any topic
Grammar		
Sentence start	Capital initial	Capitalize for beginning of new discourse "sentence"
Time		
Index/line numbers	1	Number each line/section for referencing

APPENDIX C Access to school letter

Αθήνα, 2 Ιουλίου 2013

Προς: τα Εκπαιδευτήρια Γείτονα, Υπόψη κ. Ελευθέριου Γείτονα

Από: Μόνικα Γαβριηλίδου, Ινστιτούτο Τεχνολογίας Υπολογιστών και Εκδόσεων, MA in Education, Υπ. Διδάκτορα Πανεπιστημίου Θεσσαλίας

Συνοπτική πρόταση για την υλοποίηση σειράς συναντήσεων με θέμα «Μαθαίνω με τα ψηφιακά παιχνίδια» στο πλαίσιο της διεξαγωγής ερευνητικής εργασίας.

Τα ψηφιακά παιχνίδια αποτελούν αναπόφευκτο στοιχείο της πραγματικότητας που βιώνουν οι μαθητές κάθε ηλικίας. Το πλήθος και οι ποικίλες τεχνολογικές δυνατότητες των παιχνιδιών αυτών συχνά τους συναρπάζουν. Ταυτόχρονα όμως προκαλούν ερωτηματικά σε δασκάλους και γονείς αναφορικά με την εκπαιδευτική τους αξιοποίηση καθώς και τις συμπεριφορές που αναδεικνύονται μέσα από τη χρήση τους.

Η παρούσα πρόταση αφορά την υλοποίηση σειράς συναντήσεων της ερευνήτριας με μαθητές των εκπαιδευτηρίων που θα επιθυμούσαν να συμμετέχουν στη δημιουργία πιλοτικής λέσχης εκπαιδευτικού ψηφιακού παιχνιδιού.

Στόχος των συναντήσεων είναι η αξιοποίηση των ψηφιακών παιχνιδιών ως πλαίσιο στο οποίο λαμβάνει χώρα η μάθηση, αλλά και ως αφορμή για καλλιέργεια ομαδικού πνεύματος και συνεργασίας των μαθητών.

Προτεινόμενο χρονοδιάγραμμα: Προτείνεται η υλοποίηση 3μηνου κύκλου συναντήσεων εκτός σχολικού ωραρίου. Για την εύρυθμη λειτουργία του προγράμματος κρίνεται σκόπιμη η διεξαγωγή τουλάχιστον μιας συνάντησης σε εβδομαδιαία βάση. Κάθε συνάντηση θα έχει διάρκεια 2 ώρες.

Ηλικία και αριθμός συμμετεχόντων: Οι συναντήσεις του προγράμματος «Μαθαίνω με τα ηλεκτρονικά παιχνίδια» απευθύνονται σε μαθητές Β΄ έως Ε΄ Δημοτικού. Ο αριθμός συμμετεχόντων μαθητών στο πρόγραμμα δεν θα πρέπει να ξεπερνά τους 15. Σε περίπτωση α) εκδήλωσης ενδιαφέροντος συμμετοχής από περισσότερους μαθητές είτε β) εκδήλωσης ενδιαφέροντος συμμετοχής από μαθητές με μεγάλες διαφορές ως προς την εμπειρία στη χρήση ψηφιακών παιχνιδιών είναι δυνατή η υλοποίηση δεύτερου προγράμματος συναντήσεων, προσαρμοσμένου στις ιδιαίτερες ανάγκες των συμμετεχόντων.

Περιεχόμενο προγράμματος: Στο ξεκίνημα του προγράμματος οι μαθητές θα κληθούν να απαντήσουν σε ένα σύντομο ερωτηματολόγιο που θα αναζητά πληροφορίες αναφορικά με τις προτιμήσεις και τις συνήθειές τους ως προς τα ψηφιακά παιχνίδια. Οι απαντήσεις των μαθητών πρόκειται να αξιοποιηθούν στη συνέχεια του προγράμματος και θα συντελέσουν στον καθορισμό των τρόπων αξιοποίησης των παιχνιδιών. Στον κορμό των συναντήσεων θα ενταχθούν συγκεκριμένα παιχνίδια ρόλων και παιχνίδια στρατηγικής με εκπαιδευτικό

χαρακτήρα. Πρόκειται για παιχνίδια που έχουν προεπιλεγεί με συγκεκριμένα ερευνητικά κριτήρια, ενώ έχει δοθεί ιδιαίτερη προσοχή ώστε

- Να απευθύνονται σε μικρές ηλικίες μαθητών
- Να μην αποτυπώνονται σε αυτά βίαιες καταστάσεις ή έντονα αρνητικά συναισθήματα.
- Η εξοικείωσή τους να μην απαιτεί πολύωρη εξάσκηση από τους χρήστες, ενώ η πρόσβαση σε αυτά να είναι απλή.

Ερευνητικοί στόχοι – Εκπαιδευτικοί στόχοι: Οι παραπάνω συναντήσεις πρόκειται να συνδράμουν στη μελέτη των ψηφιακών παιχνιδιών ως πλαισίου μάθησης. Ειδικότερα, το ερευνητικό ενδιαφέρον πρόκειται να εστιάσει στη διερεύνηση των σχέσεων αλληλεπίδρασης που αναπτύσσονται μεταξύ του παίκτη-χρήστη και του περιβάλλοντος του ψηφιακού παιχνιδιού, καθώς και των παικτών μεταξύ τους κατά την ενασχόλησή τους με τα ψηφιακά παιχνίδια. Στην κατεύθυνση αυτή οι μαθητές πρόκειται να συμμετάσχουν σε ψηφιακά παιχνίδια με διαφορετικά επίπεδα αλληλεπίδρασης.

Παράλληλα, στη διάρκεια του προγράμματος θα μελετηθεί η παρουσία του στοιχείου της αφήγησης στο ψηφιακό παιχνίδι, τόσο σε επίπεδο πλοκής του παιχνιδιού όσο και σε επίπεδο παραγωγής προσωπικών αφηγήσεων - απολογισμού της πορείας μάθησης των παικτών κατά την ενασχόλησή τους με το ψηφιακό παιχνίδι.

Η ενασχόληση των μαθητών με τα ψηφιακά παιχνίδια θα σχετίζεται τόσο με συγκεκριμένους εκπαιδευτικούς στόχους – δοκιμασίες που θα κληθούν να φέρουν εις πέρας, όσο και με καλές πρακτικές που αφορούν τα ψηφιακά παιχνίδια (διαχειρίζομαι το χρόνο μου ως παίκτης, συνεργάζομαι, δεν απομονώνομαι, μαθαίνω να κερδίζω αλλά και

να χάνω, επιλέγω ή απορρίπτω ένα ψηφιακό παιχνίδι, βρίσκω ενδιαφέρον να μαθαίνω μέσα από το ψηφιακό παιχνίδι).

Η Μόνικα Γαβριελίδου έχει σπουδάσει Γαλλική Γλώσσα και Φιλολογία στο Εθνικό και Καποδιστριακό Πανεπιστήμιο της Αθήνας. Οι μεταπτυχιακές της σπουδές (MA in Education, University of Bath, UK) εστίασαν σε θέματα Οργάνωσης και Διοίκησης της Εκπαίδευσης και κυριότερα σε θέματα επιμόρφωσης των εκπαιδευτικών. Εργάζεται στο Ινστιτούτο Τεχνολογίας Υπολογιστών και Εκδόσεων ως Σύμβουλος Θεμάτων Εκπαίδευσης και Επιμόρφωσης στις ΤΠΕ. Είναι Υποψήφια Διδάκτωρ του Παιδαγωγικού Τμήματος Προσχολικής Εκπαίδευσης του Πανεπιστημίου Θεσσαλίας. Επιβλέπουσα: Άννα Χρονάκη, Καθηγήτρια, τηλ. 24210 74749, Chronaki@uth.gr

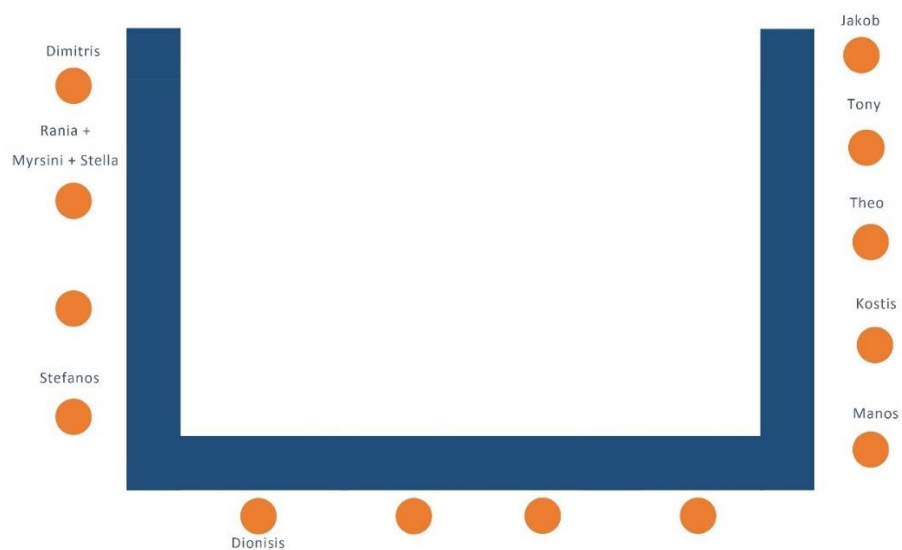
Στοιχεία επικοινωνίας: Μόνικα Γαβριελίδου, τηλ. 210 9670529, Monica.Gavrielidou@cti.gr

APPENDIX D School workshop seating arrangement plans

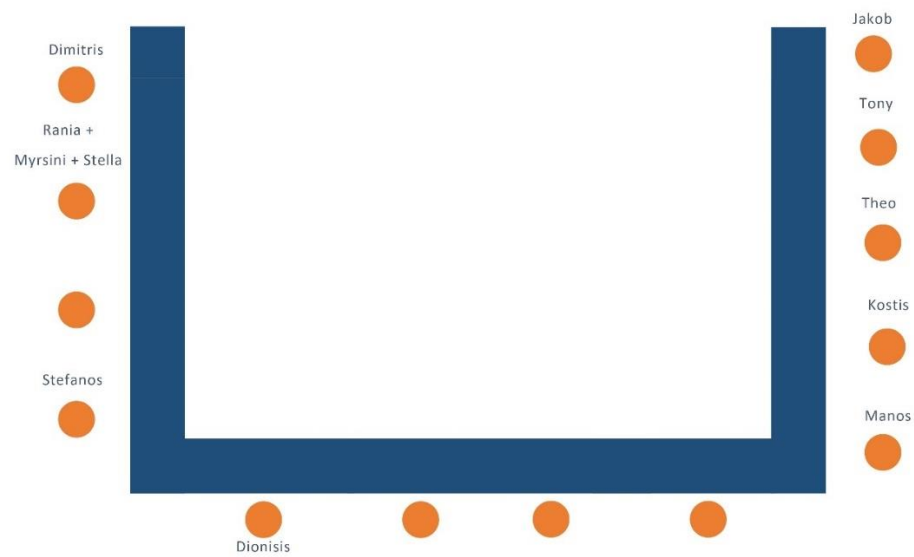
School workshop seating arrangement plan: Session 1



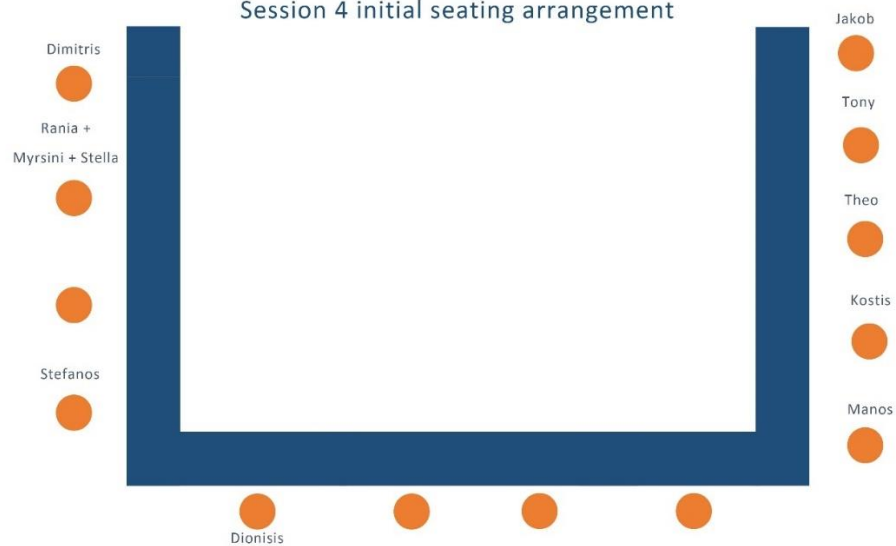
School workshop seating arrangement plan: Session 2



School workshop seating arrangement plan: Session 3



School workshop seating arrangement plan: Session 4 initial seating arrangement



APPENDIX E Children's game suggestions

Τι παιχνίδια προτείνετε να
παιχτεί συν εναότα φασά;

Ιάσοντας : Batman Gotham City Rush (www.triv.com)
Νίκος Μ: Ice Age Village
Θωμάς Δ: hero zero

Ιλπίάδης: miniclip : Rob the Rober
κυριάκος, παύλος

Ρούβα, Ιλιάννα, Μαρ, Γέρα

Προτείνουμε Starbowl ♥

Νίκος = Papa Lui 2 when Burgers Attack

REFERENCES

ENGLISH REFERENCES

- Aarseth, E. J. (1997). *Cybertext: perspectives on ergodic literature*. Baltimore (Md): Johns Hopkins University Press.
- Aarseth, E. (2012). A Narrative Theory of Games. *Proceedings FDG 2012*. Raleigh, NC, USA: FDG.
- Adams, E., & Dormans, J. (2012). *Game Mechanics. Advanced Game Design*. Berkeley: New Riders Games.
- Ahola, J., & Lucas, B. (1981). Participant Observation in Educational Research Dynamics of Role Adjustment in a High School Setting. *Mc Gill Journal of Education*, 16 (No 001), 76–90.
- Almy, M., & Genishi, C. (1979). *Ways of studying children: an observation manual for early childhood teachers*. New York: Teachers College Press.
- Ankney, K. (2016). Studying Music Teachers' Awareness of Students' Musical Thinking through Video Stimulated Recall Techniques. *Bulletin of Empirical Music Education Research*, (7) 1, 1-14.
- Aranda, D., Roca-Sales, M., & Sanchez – Navarro, J. (2014). Television and the Internet: the role digital technologies play in adolescents' audio-visual media consumption. Young television audiences in Catalonia (Spain). *Journal of Youth Development*, (9) 1, 71-85.
- Aslanidou, S., & Menexes, G. (2008). Youth and the Internet: Uses and practices in the

- home. *Computers and Education*, 51 (3), 1375-1391.
- Auer, P. (2005). Apostscript: Code-switching and social identity. *Journal of Pragmatics* 37: 403-410.
- Avedon, E. M., & Sutton-Smith, B. (1981). *The study of games*. New York: John Wiley and Sons Inc.
- Bacalja, A. (2023). Digital game literacies and school learning: A sociocultural perspective. *Ludic Language Pedagogy* (5), 23-31.
- Baceviciute, S., Rützou Albæk, K.R., Arsovski, A., Bruni, L.E. (2012). Digital Interactive Narrative Tools for Facilitating Communication with Children during Counseling: A Case for Audiology. In: Oyarzun, D., Peinado, F., Young, R.M., Elizalde, A., Méndez, G. (eds) *Interactive Storytelling. ICIDS 2012. Lecture Notes in Computer Science*, vol 7648. Springer, Berlin, Heidelberg.
- Bakhtin, M., (1981). *The dialogic imagination. Four Essays*. Holquist, M., Ed., Austin: University of Texas Press.
- Bakhtin, M., (1984a). *Problems of Dostoevsky's Poetics*. Emerson, C., Ed., University of Minnesota Press
- Bakhtin, M., (1984b). *Rabelais and his world*. Bloomington, Indiana University Press.
- Bakhtin, M., (1986). *Speech genres and other late essays*. Austin: University of Texas Press.
- Banaszewski, T.M. (2005). *Digital storytelling: Supporting digital literacy in grades 4-12*. Masters of Science Thesis, USA: Georgia Institute of Technology.

- Bartlett, F. C. (1932). *Remembering*. Cambridge, Cambridge University Press.
- Bassiouni, D., (2013). *Children's Experiences of Video Game Consumption: Development, Socialisation and Identity*. PhD Thesis. Royal Holloway University of London.
- Barthes, R., (1977). Introduction to the Structural Analysis of Narratives, In: Image – Music – Text, London: Fontana.
- Bateson, G., (1972). A Theory of Play and Fantasy. In *Steps to an Ecology of Mind*. New York: Ballantine Books.
- Baudrillard, J., (1988). *Selected Writings*. Poster, M., Ed., Stanford University Press.
- Becker, H. S., & Geer, B., (1969). Participant Observation and Interviewing: A Comparison. *Human Organization*, 28-32.
- Belanger, V., (2013). Emergence and Minecraft.
<https://prezi.com/uzeojup05bwg/emergence-and-minecraft/>
- Bentley, T., Johnston, L., & von Braggo, K., (2005). Evaluation using clued-recall debrief to elicit information about user's affective experiences. In: H. Shen, Eds., *OZCHI 2005 Proceedings*. New York: ACM, 1-10.
- Blommaert, J., (2007). Sociolinguistics and Discourse Analysis: Orders of Indexicality and Polycentricity. *Journal of Multicultural Discourses* 2(2): 115-130.
- Bloom, B. S., (1953). Thought processes in lectures and discussion. *Journal of General Education*, 7, 160-169.
- Bordwell, D., (1985). *Narration in the Fiction Film*. Routledge, University of Wisconsin.
- Bogost, I. (2007). The Rhetoric of Video Games. In: K. Salen, Ed., *The Ecology of Games*:

- Connecting Youth, Games, and Learning* (pp. 117–140). Cambridge, MA: The MIT Press: The John D. and Catherine T. Mac Arthur Foundation Series on Digital Media and Learning.
- Bogost, I. (2007b). *Persuasive Games: The Expressive Power of Videogames*. The MIT Press.
- Bronfenbrenner, U. (1977). Toward an experimental ecology of human development. *American Psychologist*, 32 (7), 513.
- Brown, D. (2015). Games and the Magic Circle. In: N. Lee Ed., *Encyclopedia of Computer Graphics and Games*. Switzerland: Springer International Publishing.
- Bruner, J. (1985). Narrative and Paradigmatic Modes of Thought. In E. Eisnerd (Ed.), *Learning and Teaching the Ways of Knowing 84th Yearbook of the NSSE Part II* (pp. 97–115). Chicago: University of Chicago Press.
- Bruner, J. S. (1986). *Actual minds, possible worlds*. Cambridge, Mass.: Harvard University Press.
- Bruner, J. S. (1990). *Acts of meaning*. Cambridge, Mass.: Harvard Univ. Press.
- Bruner, J. (1991). The Narrative Construction of Reality. *Critical Inquiry*, 18(1), 1–21.
- Bruner, J. (2004). Life as Narrative. *Social Research*, 71(3), 691–711.
- Bryan, J. S. (2013). *The Dynamics of the Player Narrative. How Choice Shapes Videogame Literature*. MSc Thesis, Georgia Institute of Technology.
- Buckingham, D. (2000). *After the death of childhood: growing up in the age of electronic media*. Cambridge: Polity Press.

- Caillois, R. (1961). *Man, play and games*. The Free Press.
- Calleja, G. (2007a). *Digital Games as Designed Experience: Reframing the Concept of Immersion*. PhD Thesis. Victoria University of Wellington.
- Calleja, G. (2007b). Revising Immersion: A conceptual Model for the Analysis of Digital Game Involvement. *Situated Play, Proceedings of DIGRA 2007 Conference*, 83–90. Digital Games Research Association.
- Calleja, G. (2011). *In-game: from immersion to incorporation*. Cambridge, MA; London: MIT Press.
- Calleja, G. (2012). Erasing the Magic Circle. In J. Sageng et al (Ed.), *The Philosophy of Computer Games, Philosophy of Engineering and Technology*. Springer Science & Business Media.
- Calleja, G. (2013). Narrative Involvement in Digital Games. *Foundations of Digital Games, Chania, Crete, 14-17 May 2013* www.fdg.2013.org
- Castronova, E. (2005). *Synthetic worlds: the business and culture of online games*. Chicago: University of Chicago Press.
- Cauduro, M. T., Birk, M., & Wachs, P. (2009). Arts-based investigation: A Brazilian story. *Forum: Qualitative Social Research*, 10(2), 33.
- Charmaz, K. (2012). The Power and Potential of Grounded Theory. *Medical Sociology Online*, 6, 2-15.
- Chatman, S. (1978). *Story and Discourse*. Cornell University Press.
- Chik, A. (2014). Digital gaming and language learning: Autonomy and

- community. *Language Learning and Technology*, 18(2), 85-100.
- Christensen, P.M., & James, A. (2008). *Research with Children: Perspectives and Practices*, Routledge.
- Chronaki, A. (2009). An Entry to Dialogicality in the Maths Classroom: Encouraging Hybrid Learning Identities. In Cesar, M. & Kumpulainen, K. (Eds), *Social Interactions in Multicultural Settings* (p.117-143), Brill Publications.
- Chronaki, A., Planas N., & Svensson Kallberg, P. (2022). Onto Epistemic Violence and Dialogicality in Translanguaging Practices Across Multilingual Mathematics Classrooms. *Teachers College Record*. 124 (5) 108-126.
- Chun Tie Y, Birks M, Francis K. (2019). *Grounded theory research: A design framework for novice researchers*. SAGE Open Medicine. 2019;7.
- Clarke, D. (2003). International Comparative Research in Mathematics Education. In: Bishop, A.J., Clements, M.A., Keitel, C., Kilpatrick, J., Leung, F.K.S. (eds) *Second International Handbook of Mathematics Education*. Springer International Handbooks of Education, vol 10. Springer, Dordrecht.
- Cohen, L.E. (2009). The Heteroglossic World of Preschoolers' Pretend Play. *Contemporary Issues in Early Childhood*, 10(4), 331-342.
- Cohen, L.E. (2011). Bakhtin's Carnival and Pretend Role-play: A Comparison of Social Contexts. *American Journal of Play*, 4(2), 176–203.
- Consuegra, E., Engels, N. & Willegems, V. (2016) Using video-stimulated recall to investigate teacher awareness of explicit and implicit gendered thoughts on

- classroom interactions, *Teachers and Teaching*, 22:6, 683-699.
- Costall, A. (1997). Innocence and Corruption: Conflicting Images of Child Art. *Human Development*, 40(3), 133–144.
- Coupland, N. (2007). *Style: Language variation and Identity*. Cambridge: Cambridge University Press
- Crawford, C. (2003). *On game design*. Indianapolis, In.: New Riders.
- Cresswell, J.& Hawn, A. (2011). Drawing on Bakhtin and Goffman: Toward an Epistemology that Makes Lived Experience Visible. *Forum Qualitative Sozialforschung Forum: Qualitative Social Research*, 13 (1).
- Czarniawska, B. (2004). *Narratives in Social Science Research. Introducing Qualitative Methods*. London: Sage Publications.
- Del Prete, D. (2005). An Interactional Sociolinguistics Perspective. *Teachers College, Columbia University Working Papers in TESOL & Applied Linguistics*, 5(2).
- De Munck, V. C., & Sobo, E. J. (1998). *Using Methods in the Field: A Practical Introduction and Casebook*. Walnut Creek, CA: AltaMira Press.
- Denzin, N. (2006). Pedagogy, Performance, and Autoethnography. *Text and Performance Quarterly*, 26(4).
- Deterding, S. (2009). The Game Frame: Systemizing a Goffmanian Approach to Video Game Theory. *Breaking New Ground: Innovation in Games, Play, Practice and Theory, Proceedings of DIGRA 2009*, 1-5.
- Di Carlo, M., Gibbons, J., Kaminsky, D., Wright, J., Stiles, D. (2000). Street children's

- drawings. Windows into their life circumstances and aspirations. *International Social Work*, 43(1):107-120.
- Draucker, C.B., Martsolf, D.S., Ross, R., Rusk, T.B. (2007). Theoretical Sampling and Category Development in Grounded Theory. *Qualitative Health Research*. 2007;17(8):1137-1148.
- Eggleton, T. (1996). Literary theory, an introduction. Minneapolis: University of Minnesota Press.
- Erlandson, D. A., Harris, E. L., Skipper, B., & Allen, S. D. (1993). *Doing naturalistic inquiry: A guide to methods*. Newbury Park, CA: Sage Publications.
- Ermi, L., & Mayra, F. (2005). Fundamental Components of the Gameplay Experience: Analysing Immersion. In S. de Castell & J. Jenson (Eds.), *Changing Views: Worlds in Play. Selected Papers of the 2005 Digital Games Research Association's Second International Conference* (pp. 15–27). Digital Games Research Association.
- Eskelinen, M. (2001). The Gaming Situation. *Game Studies*, 01(01).
- Facca, D., Smith, M.J., Shelley, J., Lizotte, D., Donelle, L. (2020). Exploring the ethical issues in research using digital data collection strategies with minors: A scoping review. *PLoS ONE* 15(8): e0237875.
- Farrow, R., & Iacovides, I. (2013). Gaming and the limits of digital embodiment. *Philosophy & Technology*, 27(2), 221–233.
- Fine, G. A. (1979). Small Groups and Culture Creation: The Idioculture of Little League Baseball Teams. *American Sociological Review*, 44(5), 733–745.

- Flynn, R. M., Richert, R. A., & Wartella, E. (2019). Play in a digital world: How interactive digital games shape the lives of children. *American Journal of Play*, 12(1), 54–73.
- Fox-Turnbull, W. (2011). Stimulated Recall Using - A Method for Investigating Technology Education. In C. Benson & J. Lunt (Eds.), *International Handbook of Primary Technology Education: Reviewing the Past Twenty Years* (pp. 204–216). Rotterdam: Sense Publishers.
- Franzosi, R. (2004). *From words to Numbers: Narrative, Data and Social Science*. Cambridge University Press.
- Frasca, G. (2003a). Ludologists love stories too: notes from a debate that never took place. *Digital Games Research Conference 2003 Proceedings*. DiGRA.
- Frasca, G. (2003b). Simulation versus Narrative. Introduction to Ludology. In *The Video Game Theory Reader* (pp. 221–235). New York: Routledge.
- Freud, S. (1908). Creative writers and day-dreaming. *SE*, 9: 141-153.
- Freud, S. (1920). Beyond the Pleasure Principle *SE*, 18: 1-6.4
- Garfield, R. (2000). Metagames. *Games, Technology and Society (EDT 210)*. Retrieved February 2023 from 2000-garfield-metagame.pdf (wordpress.com)
- Gass, S. M., & Mackey, A. (2000). *Stimulated recall methodology in second language research*. Lawrence Erlbaum Associates Publishers.
- Gavrielidou, M., & Chronaki, A. (2016). Children's Narratives of their Digital Gameplay Experience. In T. Hug, T. Kohn, & P. Missomelius (Eds.), *Medien-Wissen-Bildung: Medienbildung wozu?* Innsbruck University Press.

- Gee, J. P. (2003). What Video Games Have to Teach us about Learning and Literacy? *Computers in Entertainment (CIE)*, 1, 20-20.
- Gee, J.P. (2007) *Good Video Games and Good Learning: Collected Essays on Video Games, Learning and Literacy*. Peter Lang, New York.
- Genette, G. (1980). *Narrative Discourse: An Essay in Method*. Cornell University Press.
- Giddens, A. (1984) *The Constitution of Society. Outline of the Theory of Structuration*. University of California Press, Berkeley.
- Glass, R. & Jorgensen, K. & Mortensen, T. & Rossi, L. (2011). Framing the Game: Four game-related approaches to Goffman's frames. In G. Crawford, V.K. Gosling, B. Light (Eds.), *Online Gaming*, Routledge.
- Glaser, B., & Strauss, A. (1967). *The Discovery of Grounded Theory: Strategies for Qualitative Research*. Mill Valley, CA: Sociology Press.
- Glassner, A. (2004). *Interactive Storytelling. Techniques for 21st Century Fiction*. AK Peters/ CRC Press.
- Goffman, E. (1959). *The Presentation of Self in Everyday Life*. Doubleday. Garden City, New York.
- Goffman, E. (1961). *Asylums: Essays on the social situation of mental patient and other inmates*. New York: Anchor Books.
- Goffman, E. (1961b). *Encounters: Two studies in the sociology of interaction*. Bobbs-Merrill.
- Goffman, Erving. (1967). *Interaction Ritual: Essays in Face to Face Behavior*. Aldine Pub.

- Co, Chicago.
- Goffman, Erving. (1974). *Frame analysis: an essay on the organisation of experience*. Harper Row.
- Green, S., Hill, M. (2005). Researching children's experience: Methods and methodological issues. In S. Greene & D. Hogan (Eds.), *Researching children's experience* (pp. 1-21). London: Sage.
- Greimas, A. (1983). *A Structural Semantics: An attempt at a Method*. University of Nebraska Press.
- Gumperz, J. J. (1982). *Discourse strategies*. Cambridge: Cambridge University Press.
- Gustafsson, V. (2021). *Designing persistent player narratives in digital game worlds*. Multimedia [cs.MM]. Université Paris-Saclay. ffNNT : 2021UPASG102ff.
- Haig, B. D. (2007). Grounded Theory. In N. J. Salkind (Ed.) *Encyclopedia of Measurement and Statistics*. Sage Publications.
- Hinske, S., Lampe, M., Magerkurth, C., Røcker, C. (2007). *Classifying pervasive games: On pervasive computing and mixed reality*. vol.1. Shaker Verlag, Aachen
- Holloway, D. (2014). Digital Play: The challenge of researching young children's Internet use. *Australian and New Zealand Communication Association Annual Conference Proceedings*, Swinburne University, Victoria.
- Holquist, M. (1990). *Dialogism. Bakhtin and his World*. Routledge.
- Hooft Graafland, J. (2018). *New technologies and 21st century children: Recent trends and outcomes*. OECD Education Working Papers 179, OECD Publishing.

- Horn, B., Cooper, S., & Deterding, S. (2017). Adapting Cognitive Task Analysis to Elicit the Skill Chain of a Game. *CHIPLAY'17, October 15-18, 2017*(Amsterdam, Netherlands), 227–289.
- Huizinga, J. (1955). *Homo ludens. A study of the Play Element in Culture*. London: Beacon Press.
- Hunicke, R., LeBlanc, M., & Zubek, R. (2004). MDA: A Formal Approach to Game Design and Game Research. In *Proceedings of the AAAI Workshop on Challenges in Game AI* (Vol. 4, No. 1).
- Ito, M., Horst, H. A., Bittanti, M. & Boyd, D. (2009). *Living and learning with new media : summary of findings from the digital youth project*. Cambridge, MA: MIT Press.
- Ito, M. (2010). *Hanging out, messing around, and geeking out: kids living and learning with new media*. Cambridge, MA: MIT Press.
- James, A., & Prout, A. (1990). *Constructing and reconstructing childhood: New directions in the sociological study of childhood* (2nd Ed (1997) Published by Routledge ed.). Oxford: Routledge.
- Jarvinen, A. (2008). *Games Without Frontiers. Theories and Methods for Game Studies and Design* (PhD). University of Tampere, Finland.
- Jaspers, J. (2011). Interactional Sociolinguistics and Discourse Analysis. In *The Routledge Handbook of Discourse Analysis* (pp. 135–146). London: Routledge.
- Jørgensen, K. (2011). Players as Coresearchers: Expert Player Perspective as an Aid to Understanding Games. *Simulation & Gaming*, 43(3), 374–390.

- Jørgensen, K. (2013). *Gameworld Interfaces*. MIT Press.
- Jørgensen, M. & Phillips, L. J. (2002). *Discourse analysis as theory and method*. SAGE Publications Ltd.
- Juul, J. (2001). Games Telling Stories? A brief note on games and narratives. *Games Studies*, 01(01).
- Juul, J. (2002). The Open and the Closed: Games of Emergence and Games of Progression. In Frans Mayra (Ed.), *Computer Games and Digital Cultures, Conference Proceedings* (pp. 323–329). Tampere: Tampere University Press.
- Juul, J. (2003a). *Half Real: Video Games between Real Rules and Fictional Worlds* (PhD). University of Copenhagen.
- Juul, J. (2003b). The Game, the Player, the World: Looking for a Heart of Gameness. In M. Copier & J. Raessens (Eds.), *Level Up: Digital Games Research Conference Proceedings* (pp. 30–45). Utrecht: Utrecht University.
- Juul, J. (2008). The Magic Circle and the Puzzle Piece. In S. Gunzel, M. Liebe, & D. Mersch (Eds.), *Conference Proceedings of the Philosophy of Computer Games* (pp. 056–067). Potsdam: Potsdam University Press.
- Juul, J. (2012). *A casual revolution: reinventing video games and their players*. Cambridge, Mass.; London: Mit Press.
- Kalantzis, M., & Cope, B. (2012). *Literacies*. Cambridge University Press.
- Karle, J. W. (2011). *The impact of action video game play on attention and cognitive control*, PhD Thesis, Mc Allister University, Hamilton, Ontario.

- Kawulich, B. (2005). Participant Observation as a Data Collection Method. *Forum Qualitative Sozialforschung/Forum: Qualitative Social Research*, 6 (2) (Art. 43).
- Kelley, D. (1988). *The Art of Reasoning*. W. W. Norton & Company, New York.
- Konert, J., Gobel, S., Steinmetz, R. (2012). Towards a social game interaction taxonomy: a social gaming approach towards peer knowledge sharing and participation in serious games. *Edutainment'12/Game Days'12: Proceedings of the 3rd international conference on E-learning and Games for Training, Education, Health and Sports*, pp 99-110.
- Koppitz, E. M. (1968). Psychological evaluation of children's human figure drawings. New York: Grune & Stratton.
- Kourti, A.; Stavridou, A.; Panagouli, E.; Psaltopoulou, T.; Tsolia, M.; Sergentanis, T.N.; Tsitsika, A. (2021). Play Behaviors in Children during the COVID-19 Pandemic: A Review of the Literature. *Children* 2021, 8 (8):706.
- Kress, G. (2010). *Multimodality: A Social Semiotic Approach to Contemporary Communication*. London: Taylor and Francis.
- Laas, O. (2014). Narratives in Digital Games: Their Place and Function in the Study of Digital Games. In R. Kelomees & C. Hales (Eds.), *Expanding Practices in Audiovisual Narratives* (pp. 29–58). Newcastle upon Tyne: Cambridge Scholars Publishing.
- Laurel, B. (2001). *Computers as Theatre*. Addison-Wesley Professional.
- Lave, J. (1988). *Cognition in practice: Mind, mathematics and culture in everyday*

- life*. Cambridge University Press.
- LeCompte, M. D. & Schensul, J. J. (1999). *Designing and Conducting Ethnographic Research*. Altamira Press.
- Lima, E. B. (2016). *Chronotope in Western Role-Playing Video Games: An Investigation of the Generation of Narrative Meaning Through its Dialogical Relationship with the Heroic Epic and Fantasy*. PHD Thesis, Brunel University London.
- Linderoth, J. (2012). The Effort of Being in a Fictional World: Upkeyings and Laminated Frames in MMORPGs. *Symbolic Interaction*. 35. 10.1002/symb.39.
- Linderoth, J. (2013). Beyond the digital divide: An ecological approach to gameplay. *Transactions of the Digital Games Research Association* 1 (1).
- Livingstone, S. & Bovill, M. (1999). *Young people, new media: report of the research project Children Young People and the Changing Media Environment*. Research report, Department of Media and Communications, London School of Economics and Political Science, London, UK.
- Lutz, F. W. & Iannaccone, L. (1969). *Understanding educational organizations; a field study approach*. Columbus, Ohio: C. E. Merrill Pub. Co
- Lyle, J. (2003). Stimulated Recall: A Report on Its Use in Naturalistic Research. *British Educational Research Journal*, 29, 861-878.
- Lyotard, J.-F. (1979). *The postmodern condition: a report on knowledge*. Minneapolis, Minn. Univ. Of Minnesota Press.
- Mackey, W. (1962). The description of bilingualism. In Li Wei (Eds) *The Bilingualism*

- Reader*. London Routledge, 26-54.
- Malliet, S. (2007). Adapting the Principles of Ludology to the Method of Video Game Content Analysis. *Game Studies*, 7 (1).
- Manovich, L. (2001). *The Language of New Media*. Cambridge, Massachusetts: The MIT Press.
- Manovich, L. (2003). New Media from Borges to HTML. In Noah Wardrip-Fruin & N. Montfort (Eds.), *The New Media Reader* (pp. 14–25). Cambridge, Massachusetts: The MIT Press.
- Maranhao, D. M., Menddonca, G. M., da Rocha Franco, A., & de O. Maia, J. G. R. (2016). Towards a Comprehensive Model for Analysis and Definition of Game Mechanics. In Proceedings of the SB Games, Sao Paulo.
- Marjanovic-Shane, A. (2011). “You are nobody”! the three chronotopes of play. In: *Dialogic Pedagogy*, E. J. White and M. Peters (Eds.), Peter Lang, Inc.
- Marshall, C., & Rossman, G. B. (1989). *Designing Qualitative Research*. Newbury Park, CA: Sage.
- Matusov, E. (2009). *Journey into dialogic pedagogy*. Hauppauge, NY: Nova Science.
- Matusov, E. (2015). Chronotopes in education Conventional and dialogic. *Dialogic Pedagogy: An International Online Journal*, Vol 3, Retrieved February 2023 from <http://dpj.pitt.edu>
- Mayra, Franz. (2007). The Contextual Game Experience: On the Socio-cultural Contexts for Meaning in Digital Play. *Situated Play, Proceedings of DiGRA 2007*

- Conference*, 810–814. Digital Games Research Association.
- Mayra, F. (2014). High and Low: Culture as Distinction. In *The Routledge Companion to Video Game Studies*, M. J. P. Wolf & B. Perron (Eds.), Routledge.
- McLuhan, M. (1964). *Understanding media: the extensions of man*. London: Routledge.
- Merriman, B., Guerin, S. (2006). Using children's drawings as data in child-centred research. *The Irish Journal of Psychology*, 27 1-2, 48-57.
- Montfort, N. (2007). Narrative and digital media. *The Cambridge Companion to Narrative*. D. Herman (Ed.), Cambridge University Press.
- Morson, G.S. & Emerson, C. (1990). *Mikhail Bakhtin: Creation of a Prosaics*. Stanford University Press.
- Murray, J. H. (1997). *Hamlet on the Holodeck the future of narrative in Cyberspace*. Baltimore & London: MIT Press.
- Murray, J. H. (1998). Interview on *The Cambridge Tab* December 22, 1998. Retrieved February 2023 from <https://news.mit.edu/1999/handt-0203>.
- Neitzel, B. (2014). Narrativity of Computer Games. In P. Huhn (Ed.) *The Living Handbook of Narratology*. Retrieved February 2023 from www.lhn.uni-hamburg.de/article/narrativity-computer-games
- Nicolopoulou, A. (1993). Play, Cognitive Development, and the Social World: Piaget, Vygotsky, and Beyond. *Human Development*, 36(1), 1–23.
- Nikolopoulou, K. (2022). Online Education in Early Primary Years: Teachers' Practices and Experiences during the COVID-19 Pandemic. *Education Sciences* 2022, 12,

76.

- Niedenthal, P. M., Winkielman, P., Mondillon, L., & Vermeulen, N. (2009). Embodiment of emotion concepts. *Journal of Personality and Social Psychology*, 96(6), 1120–1136.
- Oblinger, D. (2004). The Next Generation of Educational Engagement. *Journal of Interactive Media in Education*, 2004 (8).
- O' Kane, C. (2000). The Development of Participatory Techniques. Facilitating Children's Views about Decisions which Affect Them. In P. Christensen & A. James (Eds.), *Research with Children. Perspectives and Practices*, pp. 136-159, Falmer Press.
- Oldenburg, R. (1999). *The Great Good Place: cafes, coffee shops, bookstores, bars, hair salons and other hangouts at the heart of a community*. Da Capo Press.
- Ong, W. (1982). *Orality and Literacy: The Technologizing of the Word*. Routledge.
- Papagiannakis, G. (2019). Gamification and Serious Games. In N. Lee (Eds.), *Encyclopedia of Computer Graphics and Games*. Springer.
- Park-Fuller, L. M. (1986). Voices: Bakhtin's Heteroglossia and Polyphony, and the Performance of Narrative Literature. *Literature in Performance* 7 (1986) 1-12.
- Patton, M. Q. (1990). *Qualitative Evaluation and Research Methods*. Thousand Oaks, CA: Sage Publications.
- Persson, A. (2019) *Framing Social Interaction. Continuities and Cracks in Goffman's Frame Analysis*. Routledge.
- Piaget, J. (1962). *Play, dreams, and imitation in childhood*. New York, NY: Norton.

- Piaget, J. (2000). *The Construction of Reality in the Child*. Routledge.
- Peirce, C.S. (1958). *The Collected Papers of Charles Sanders Peirce*, Vol. VII: Science and Philosophy, A.W Burks (Eds.), Cambridge: Harvard University Press.
- Pinchbeck, D. (2009). *An affordance-based model for gameplay*. DiGRA 2009, London, United Kingdom.
- Pirie, S. E. B. (1996). Classroom Video-Recording: When, Why and How Does it Offer a Valuable Data Source for Qualitative Research? *The Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*, Panama City, FL, October 14, 1996. Retrieved February 2023 <https://eric.ed.gov/?id=ED401128>.
- Pitkanen, J. (2015). Studying thoughts. Stimulated recall as a game research method. In P. Lankoski & S. Bjork (Eds.), *Game Research Methods*. ETC Press.
- Ijsselstein, Wijnand & De Kort, Yvonne & Poels, Karolien & Jurgelionis, Audrius & Bellotti, Francesco. (2007). Characterising and Measuring User Experiences in Digital Games. *Journal of Applied Mechanics-transactions of The Asme - J APPL MECH*.
- Polkinghorne, D. E. (1988). *Narrative Knowing and the Human Sciences*. Albany: State University of New York Press.
- Polyzou, A. (2008). Dialogism and the Process of Meaning Making: Studying the Chronotopicity of Pedagogical Interaction in a Multimodal - Hypermedia Educational Context. In *Perspectives and Limits of Dialogism in Mikhail Bakhtin*

- (pp. 233–250). Rethymnon, Crete: University of Crete.
- Porter Abbot, H. (2002). *The Cambridge Introduction to Narrative*. Cambridge University Press.
- Prensky, M. (2001). *Digital Game-Based Learning*. New York: McGraw-Hill.
- Prince, G. (2003). *Dictionary of Narratology*. University of Nebraska Press.
- Propp, V. (1968). *Morphology of the folktale*. Austin, Tex. [U.A.] Univ. Of Texas Press.
- Puente Bienvenido, H. & Sequeiros Bruna, C.(2019). A Sociological Approach from the Dramaturgical Perspective to Entertainment and Leisure Devices, *Revista Española de Sociología (RES)*28 (2), pp. 289-304.
- Qvortrup, J. (2000). Macroanalysis of Childhood. In P. Christensen & A. James (Eds.), *Research with Children. Perspectives and Practices*, Falmer Press, 77-97.
- Rampton, B. (2017). Interactional Sociolinguistics. *Tilburg Papers in Culture Studies*, (175).
- Ross, R. N. (1975). Ellipsis and the Structure of Expectation. *San Jose State Occasional Papers in Linguistics*, Vol. 1, November, 1975.
- Roth-Gordon, J. (2021). Situating Discourse Analysis in Ethnographic and Sociopolitical Context. In A. De Fina & A. Georgakopoulou (Eds.), *The Cambridge Handbook of Discourse Studies* (Cambridge Handbooks in Language and Linguistics, pp. 32-51). Cambridge: Cambridge University Press. doi:10.1017/9781108348195.003
- Rutter, J., & Bryce, J. (2006). *Understanding Digital Games*. Sage Publications.
- Ryan, M. L. (1999). Immersion vs Interactivity: Virtual Reality and Literary Theory.

- Substance*, Vol 28, No2, Issue 89 The Johns Hopkins University Press, 110-137.
- Ryan, M. L. (2001). Beyond Myth and Metaphor – The Case of Narrative in Digital Media. *Game Studies*, 1 (1) Retrieved February 2023, www.gamestudies.org/0101/ryan
- Ryan, M. L. (2003). On Defining Narrative Media. *Image & Narrative*, (6).
- Ryan, M. L. (2004). *Narrative across media: the languages of storytelling*. Lincoln: University of Nebraska Press.
- Ryan, M. L. (2006). Semantics, Pragmatics, and Narrativity: A Response to David Rudrum. *Narrative*, 14(2), 188–196.
- Ryan, M. L. (2006b). *Avatars of story*. Minneapolis: University of Minnesota Press.
- Ryan, M. L. (2009). Narrativity and its modes as culture-transcending analytical categories. *Japan Forum* 21 (3) 2009: 307-322.
- Ryan, M. L. (2011). The Interactive Onion: Layers of User Participation in Digital Narrative Texts. In R. Page & B. Thomas (Eds.), *New Narratives: Stories and Storytelling in the Digital Age*. US: University of Nebraska Press, 35-62.
- Ryan, M. L. (2012). Narration in Various Media. In P. Huhn, J. Pier, W. Schmid & J. Schonert (Eds), *Handbook of Narratology*. Berlin: Walter de Gruyter, 263-281.
- Ryan, M. L. (2013). Transmedial Storytelling and Transfictionality. *Poetics Today*, 34 (3), pp.361-388.
- Ryan, M. L. (2014). My Narratology: An Interview with Marie-Laure Ryan (DIEGESIS, Interviewer). Retrieved from <https://www.diegesis.uni-wuppertal.de>
- Ryan, M. L. (2015). *Narrative as virtual reality 2: revisiting immersion and interactivity*

- in literature and electronic media*. Baltimore: Johns Hopkins University Press.
- Ryan, M. L. (2022). *Narratology for Game Studies*, <https://www.marilaur.info/> (Retrieved February 2023.)
- Salen, K., & Zimmerman, E. (2003). *Rules of play: game design fundamentals*. Cambridge, Mass. The MIT Press.
- Saussure, F. (1916). *Course in General Linguistics*. London: Duckworth.
- Schamroth Abrams, S. (2010). The Dynamics of Video Gaming: Influences Affecting Game Play and Learning. In P. Zemliansky & D. Wilcox (Eds.), *Design and Implementation of Educational Games: Theoretical and Practical Perspectives*. IGI Global.
- Scheibenzuber, C., Neagu, L., Ruseti, S., Artmann, B., Bartsch, C., Kubik, M., Dascalu, M., Trausan-Matu, S., Nistor, N. (2023). Dialog in the echo chamber: Fake news framing predicts emotion, argumentation and dialogic social knowledge building in subsequent online discussions, *Computers in Human Behavior*, Vol.140, Retrieved May 2024 from <https://www.sciencedirect.com/science/article/pii/S0747563222004071>
- Schell, J. (2008). *The art of game design: a book of lenses*. Boca Raton: Taylor & Francis.
- Schmuck, R. A. (1997). *Practical Action Research for Change*. Sage Publications.
- Sebba, M. (2007). Identity and language construction in an online community: The case of “Ali G”. In P. Auer (Ed.), *Style and Social Identities. Alternative Approaches to Linguistic Heterogeneity*. Berlin and New York: Mouton de Gruyter, 361-392.

- Shannon, C. and Weaver, W. (1948) The Mathematical Theory of Communication. *Bell System Technical Journal*, 27, 379-423, 623-656.
- Shoshani, A., Bravermah, S., Meirow, G. (2021). Video games and close relations: Attachment and empathy as predictors of children's and adolescents' video game social play and socio-emotional functioning. *Computers in Human Behavior*, 114 (1).
- Sicart, M. (2011). *The Ethics of Computer Games*. The MIT Press.
- Sierra, S. (2016). Playing out loud: Videogame references as resources in friend interaction for managing frames, epistemics, and group identity. *Language in Society*, 1-29.
- Simons, J. (2007). Narrative, Games and Theory. *Game Studies*, 7 (1).
- Statista (2021) Video game industry Statistics and facts, Retrieved February 2023 from <https://www.statista.com/topics/868/video-games/#topicOverview>.
- Steinkuehler, C. A. (2004). Learning in massively multiplayer online games. In Y. B. Kafai, W. A. Sandoval, N. Enyedy, A. S. Nixon, & F. Herrera (Eds.), *Proceedings of the sixth International Conference of the Learning Sciences* pp.521-528. Mahwah, NJ: Erlbaum.
- Steinkuehler, C. A. (2006). Virtual Worlds, Learning and the New Pop Cosmopolitanism. Teachers College Record, Nov 17, 2006, <http://www.tcrecord.org>
- Stenros, J. H. J. (2008). *The frames of pervasive live action role-playing games. A Case Study Applying Frame Analysis on Momentum*, Master's Thesis, University of Helsinki.

- Stiles, D. A. & Gibbons, J. L. (2000). Manual for evaluating individual and social values expressed in international adolescents' drawings of ideal woman and man. *World Cultures*, 11, 181-221.
- Stiles, D. A., Gibbons, J. L., Lie, S., Sand, T. & Krull, J. (1998). "Now I am living in Norway": Immigrant girls describe themselves. *Cross-Cultural Research: The Journal of Comparative Social Science*, 32, 279-298.
- Street B. V. (1999). Literacy and social change: The significance of social context in the development of literacy programmes. In Wagner D. A. (Ed.), *Future of literacy in a changing world* (pp. 55–72). Cresskill, NJ: Hampton Press
- Suits, B. (1978). *The grasshopper: games, life and utopia*. University of Toronto.
- Świerczyńska-Kaczor, U. (2024). Empirical insights into traditional and AI-enhanced interactive narratives based on children's fables. *Journal of Economics & Management*, 46, 25-54.
- Tannen, D. (1984). *Conversational Style: Analyzing Talk among Friends*. Oxford University Press.
- Tannen, D. (2016). Discourse Analysis - What Speakers Do in Conversation. Linguistic Society of America, Retrieved in February 2023. <https://www.linguisticsociety.org/resource/discourse-analysis-what-speakers-do-conversation>.
- Tannen, D. (1992). Interactional Sociolinguistics¹. In *Oxford International Encyclopedia of Linguistics* (Vol. 4). Oxford University Press.

- Tannen, D. (1994). *Gender and discourse*. New York; Oxford: Oxford University Press.
- Theobald, M. (2008). Methodological issues arising from video-stimulated recall with young children. *Australian Association for Research in Education*, 30 Nov-4 Dec 2008 Brisbane.
- Theodoropoulou, I. (2014). *Sociolinguistics of Style and Social Class in Contemporary Athens*. John Benjamins Publishing Company.
- Thibault, M. (2016). The meaning of play. A theory of playfulness, toys and games as cultural semiotic devices. PhD Thesis, University of Torino.
- Thomas, G.V.& Jolley, R.P. (1998). Drawing conclusions: A re-examination of empirical and conceptual bases for psychological evaluation of children from their drawings. *British Journal of Clinical Psychology*, 37, 127-139.
- Thomsen, C. W. (1994). *Hybridkultur, Bildschirmmedien und Evolutionsformen der Künste*. Siegen: DGF Sonderforschungsbereich.
- Tobin, J. (2000). *“Good Guys Don’t Wear Hats”: Children’s Talk about the Media*. New York: Teachers College Press.
- Van Maanen, J. (1988). *Tales of the Field. On Writing Ethnography*. The University of Chicago Press.
- Veresov, N., & Veraksa, N. (2023). Digital games and digital play in early childhood: a cultural-historical approach. *Early Years*, 43(4–5), 1089–1101.
<https://doi.org/10.1080/09575146.2022.2056880>
- Voulgari, I., & Yannakakis, G. (2019). *Digital Games in Non-formal and Informal*

- Learning Practices for Science Learning: A Case Study*. In Proceedings of Games and Learning Alliance, 8th International Conference, GALA 2019, Athens, Greece. 10.1007/978-3-030-34350-7_52.
- Vygotsky, L. S. (1978). *Mind in society: the development of higher psychological processes*. Cambridge, Mass.: Harvard Univ. Press.
- Walkerdine, V. (2007). *Children, gender, video games: towards a relational approach to multimedia*. Basingstoke England; New York, Ny: Palgrave Macmillan.
- Warner, W.B. (2002). Computable Culture and the Closure of the Media Paradigm. *Postmodern Culture* 12(3)
- Weimin, T. (2015). A Multimodal Discourse Analysis of Video Games: A Ludonarrative Model. *Proceedings of DiGRA 2015: Diversity of Play: Games -Cultures - Identities*. Digital Games Research Association.
- Wertsch, J. V. (1997). *Voices of the mind a sociocultural approach to mediated action*. Cambridge, Mass.: Harvard Univ. Press.
- Wikipedia Contributors. (2019, February 2). Fortnite. Retrieved from Wikipedia website: <https://en.wikipedia.org/wiki/Fortnite>
- Wilson, S. (1977). The Use of Ethnographic Techniques in Educational Research. *Review of Educational Research*, 47(2), 245–265.
- Wilson, M., Bejar, I., Scalise, K., Templin, J., Wiliam, D., Irribarra, D. (2011). Perspectives on Methodological Issues. In P. Griffin, B. Mc Graw & E. Care (Eds), *Assessment and Teaching of 21st Century Skills*, New York: Springer, pp. 67-141.

- Wirth, W., Hartmann, T., Böcking, S., Vorderer, P., Klimmt, C., Schramm, H., Saari, T., Laarni, J., Ravaja, N., Gouveia, F., Biocca, F., Sacau, A., Baumgartner, T., Jäncke, P. (2007). A Process Model of the Formation of Spatial Presence Experiences. *Media Psychology*, 9(3), 493–525.
- Wolf, M. J. P. (2010). Theorizing Navigable Space in Video Games. In *Logic and Structure of the Computer Game*, S. Gunzel, M. Liebe, D. Mersch (Eds), Potsdam: University Press, pp.018-048.
- Yamada-Rice, D. (2021). Children’s interactive storytelling in Virtual Reality. *Multimodality & Society*, 1(1), 48-67.
- Yap, Kevin & Yap, Kai Zhen & Yap, John. (2015). A Gamification Framework for Training of Patient and Medications Management Skills. *Journal of Game-Supported Interactive Learning*. 1. 47-58. 10.15340/2148194611941.
- Youn Jung Huh (2017). Uncovering young children’s transformative digital game play through the exploration of three-year-old children’s cases. *Contemporary Issues in Early Childhood*, July 4, 2017.

FRENCH REFERENCES

- Bremond, C., (1964). Le message narratif. *Communications*, 4(4), 4-32.

GREEK REFERENCES

- Αργύρης, Β. (2018). *Το γλωσσικό παιχνίδι ως ψηφιακή διεπίδραση: Ελληνόφωνοι και*

- αγγλόφωνα παιχνίδια στο διαδίκτυο. Διδακτορική διατριβή, ΕΚΠΑ.
- Αριστοτέλης, (2008). *Ποιητική*. Θεσσαλονίκη, Εκδόσεις Ζήτηρος.
- Γεωργαλίδου, Μ. (2014). Δίγλωσσες συνομιλίες. In Γεωργαλίδου, Μ.; Σηφianού, Μ. & Τσάκωνα Β. Eds., *Ανάλυση Λόγου. Θεωρία και εφαρμογές*, Αθήνα, Εκδόσεις Νήσος.
- Γιαννημάρα, Ε. (2014). *Δυνατότητες Αξιοποίησης των Διαδικτυακών Παιχνιδιών Gettygames στη Διδασκαλία των Εικαστικών στην Στ' τάξη του Ελληνικού Δημοτικού*. Διδακτορική διατριβή, ΑΣΚΤ.
- Θεοδοροπούλου, Ε. (2014). Διεπιδραστική Κοινωνιογλωσσολογία. In Γεωργαλίδου, Μ.; Σηφianού, Μ. & Τσάκωνα Β. Eds., *Ανάλυση Λόγου. Θεωρία και εφαρμογές*, Αθήνα, Εκδόσεις Νήσος.
- Κατσιώνης, Γ. (2007). *Συναισθηματική ευφυΐα για προσαρμοστικό εκπαιδευτικό παιχνίδι εικονικής πραγματικότητας στο διαδίκτυο*. Διδακτορική διατριβή, Πανεπιστήμιο Πειραιώς.
- Κίργινας, Σ. (2020). *Η επίδραση ψηφιακών παιχνιδιών ελεύθερης διάδρασης στις αφηγηματικές δεξιότητες μαθητών δημοτικού σχολείου: μαθησιακά αποτελέσματα και διδακτική αξιοποίηση*. Διδακτορική Διατριβή, ΕΚΠΑ.
- Λούτα, Κ. (2021). *Ψηφιακά παιχνίδια, ιστορία και ιστορική συνείδηση: θεωρητικές προσεγγίσεις, ερευνητικά δεδομένα και εμπειρικά στοιχεία στο σχολείο*. Διδακτορική Διατριβή, Πανεπιστήμιο Πελοποννήσου.
- Μακρυνιώτη, Δ. (1996). Erving Goffman: η μικροκοινωνιολογία της καθημερινής ζωής.

- In Goffman, E., *Συναντήσεις. Δύο μελέτες στην κοινωνιολογία της αλληλεπίδρασης*, Εκδόσεις Αλεξάνδρεια.
- Πινακούλας, Γ. (2011) Η έννοια του μπαχτινικού χρόνοτοπου. Από τον μεγάλο στον μικρό χρονότοπο. *Πρακτικά 6^{ης} Συνάντησης Εργασίας Μεταπτυχιακών Φοιτητών του Τμήματος Φιλολογίας*, Εθνικό και Καποδιστριακό Πανεπιστήμιο Αθηνών, 13-15 Μαΐου 2011, Τόμος Β, σελ 263-267.
- Ροινιώτη, Ε. (2018). *Ο Χώρος στα Μαζικά Πολυχρηστικά Διαδικτυακά Παιχνίδια Ρόλων (MMORPG): Παιχνίδι, Κοινωνικότητα, Διαμεσολάβηση*. Διδακτορική Διατριβή, Πάντειο Πανεπιστήμιο.
- Σαντορινάιος, Μ. (2023). Παιδί και Ψηφιακή Τεχνολογία: Μια επανάσταση που δεν πραγματώθηκε. *Αυτόματον: Περιοδικό Ψηφιακών Μέσων και Πολιτισμού*, 2(2), 13–34. <https://doi.org/10.12681/automaton.35470>
- Σαριδάκη Μ. (2016). *Παιγνιώδεις Αλληλεπιδράσεις: Το ψηφιακό παιχνίδι στην εκπαιδευτική εμπειρία ατόμων με νοητική αναπηρία*. Διδακτορική Διατριβή, Εθνικό και Καποδιστριακό Πανεπιστήμιο Αθηνών.
- Σιδηροπούλου, Α. (2021). «Μένουμε σπίτι χωρίς οθόνες»: Ποιοτική διερεύνηση των συναισθημάτων των νεαρών ενηλίκων κατά την ισχύ των περιοριστικών μέτρων κατά της πανδημίας Covid-19. *Περιοδικό Ψυχολογία*, 26 (3), 197-209.
- Τζιόβας, Δ. (1993). *Το παλίμνηστο της ελληνικής αφήγησης. Από την αφηγηματολογία στη διαλογικότητα*. Εκδόσεις Οδυσσέας.
- Τιμπλαλέζη, Ε. (2014). *Αναλογικά και ψηφιακά παιχνίδια ρόλων: Η μαθησιακή και*

θεατρική διάσταση. Διδακτορική Διατριβή, Εθνικό και Καποδιστριακό Πανεπιστήμιο Αθηνών.

Χρήστου, Ι. (2005). *Στάση των παιδιών Ε' και ΣΤ' Δημοτικού απέναντι στο ηλεκτρονικό παιχνίδι και κοινωνική συμπεριφορά. Διδακτορική Διατριβή, Πανεπιστήμιο Ιωαννίνων.*

Χουντουμάδη, Α. & Πατεράκη, Λ. (2008). *Λεξικό Ψυχολογίας*. Εκδόσεις Τόπος.

Χρονάκη, Α. & Γαβριηλίδου, Μ. (2016). Ψηφιακά Αφηγηματικά Μέσα και Αλληλεπίδραση. *Πρακτικά 2^{ου} Πανελληνίου Συνεδρίου «Ένταξη και Χρήση των ΤΠΕ στην Εκπαιδευτική Διαδικασία»*. Πάτρα, 28-30 Απριλίου 2011. Τόμος 1, σελ. 999-1008.

Holquist, M. (2014). *Διαλογικότητα. Ο Μπαχτίν και ο Κόσμος του*. Εκδόσεις Gutenberg.