

PEOPLES' DEMOCRATIC REPUBLIC OF ALGERIA
MINISTRY OF HIGHER EDUCATION AND SCIENTIFIC RESEARCH
UNIVERSITY OF -MOSTAGANEM-
FACULTY OF FOREIGN LANGUAGES
DEPARTMENT OF ENGLISH



MASTER

« Language and Communication »

Investigating the Role of Digital Game-Based Learning in Enhancing Learners'
Social and Emotional Skills
Case Study: Second Year Ammour Djaloul Middle school
-Hassi Mamech- Mostaganem-

Submitted by: Ms: Amina DERDOUR

Members of the jury:

Supervisor: Dr. Hanane SARNOU

Examiner: Miss Mounira KHAROUBI

Chairperson: Dr. Dalal SARNOU

Academic year: 2017/2018

Dedication

To my dear mother for here endless support and encouragement

To my family members

To my friends

To all those whom i am deeply thank full for their love and moral support

A special thanks and deep gratitude to everyone who helped me accomplish this work.

Aknowledgment

Am so grateful to “God” for blessing and helping me to accomplish this work .

I would like to express my very profound gratitude to my supervisor Dr.Sarnou Hanane for providing me with constructive guidance and aspiring supervision to write this research and for her patience all along the work journey.

My sincere thanks to my examiners Dr.Sarnou Dalal and Miss.Kharoubi Mounira for their valuable advice and information.

Finally, I would like to thank the middle school teacher Ms.Bellahoual for accepting and helping me to conduct my research during here class sessions.

Abstract

The way of teaching and learning has changed nowadays; new pedagogies and tools are implemented in the classroom in order to facilitate the learning process and to develop certain skills of learners. Digital game based learning is one of the innovative approaches to learning and teaching, which is considered as an effective way to enhance learners' social and emotional skills. The aim of this study is to investigate the effectiveness of digital game based learning in enhancing social emotional skills of learners and to determine learners and teacher attitude toward this new pedagogy. In our research digital game based learning was conducted with 65 students at the level of Ammour Djaloul second year Middle School in Mostaganem. The methodology used in order to conduct this research included observation of learners attitude before and during the experiment that lasted for four weeks with second year middle school students, and a questionnaire that was handed to both teacher and students. Qualitative and quantitative methods were used to analyse the collected data. The findings show that teacher and learners had a positive attitude toward the use of digital game based learning and that DGBL is an effective tool to enhance learners' social emotional skills, the findings also show that DGBL provided the atmosphere for learners to collaborate, co-operate, solve problems, communicate and negotiate meanings.

Key words: *digital game based learning, social emotional skills, learners' attitude, teacher attitude.*

List of abbreviation

DGBL : digital game based learning

ZPD: zone of proximal development

RPG : role playing games

% : percentage

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General introduction

For a long time ago, educational games have been implemented in the classroom as an engaging strategy to help students learn new subjects and develop certain skills during the game play. Beside the educational purposes educational games provide the teacher and learners with new classroom atmosphere that is full of fun and joy. Teaching and learning in 21st century is very different from the previous centuries. Today's new generation of so called "digital natives" are a totally different type of individuals. They are surrounded by technological devices in their current life and have different learning styles. Traditional games are no more engaging and motivating for them; therefore digital game based learning has immerged to cop the difference. Digital game based learning is a virtual learning environment that uses technological devices to provide knowledge and deliver lessons with fun, motivation and lot of interaction. Digital game-based learning promote experiential and constructive learning, where learners are responsible for constructing their own knowledge through their engagement in the virtual activities presented in the game context. DGBL also develop among other skills, social emotional skills of the learners; learners are encouraged to discuss and negotiate meanings with each other, to make decisions and solve problems. Digital games provide learners with ideas and emotions during and after the game play (Lazzaro, 2004).those emotions only appear during the interaction and competition between players and game scenario.

The purpose of the present work is to investigate the role of digital game based learning in enhancing the social emotional skills of the learner and to determine teacher and learners attitude toward the use of DGBL in the classroom. For that reason, the following questions were proposed:

1-Can digital game based learning develop students' social and emotional skills?

2-what are the learners' attitudes toward digital game based learning?

3-what are the teacher attitudes toward the use of digital game based learning as a new pedagogical tool in the classroom?

As an answer to the questions above . We hypothesized that digital game based learning can support the development process of students social emotional skills. Where Students are encouraged to work in groups , discuss and negotiate meanings together .We also hypothesized that both teachers and students will show an interest and a positive attitude toward the use of digital game based learning in the classroom as a new pedagogical tool.

To evaluate our hypotheses we have selected a digital game regarding learners' level and their educational programme. The game was played with four personal computers connected to the internet. The experiment took place at the level of Ammour Djaloul second year middle school in Mostaganem.

The study is divided into three main chapters each chapter contain a set of information and steps concerning our stud

The first chapter attempt to provide the theoretical background of digital game-based learning, its characteristics, principles, educational objectives and pedagogies in game based learning for classroom integration. The first chapter also attempt to afford an over view about social emotional skills in education and digital game-based learning (educational games). The aim of this chapter is provide the reader with a wide range of information and theories underpinning digital game based learning and its relation and role in enhancing social and emotional skills of the learners.

The second chapter presents the method and the methodology used to gather data about the use of digital game-based learning to develop social and emotional skills of the learner. It presents the population, the context of the study and the three research instruments used in this study; questionnaire that was handed to the teacher and learners. Observation of learners' attitudes in their habitual learning process settings and during the game play . The experiment which lasted for four weeks conducted with 65 second year middle school learner.

The last chapter seeks to analyse and interpret the findings collected from the data collection instruments concerning the role of digital game-based learning in enhancing social emotional skills of the learners.

Chapter one

1. Introduction

This chapter presents the theoretical background of digital game-based learning and the social emotional skills of the learner. We will discuss the main characteristics of digital game-based learning, the objectives and the pedagogy of using DGBL in the classroom. The main purpose of this chapter is to introduce and provide the reader with basic information and theories that support digital game-based learning and how it could be used as a new pedagogy in the classroom setting to enhance learners' skills and help them achieve their educational goals.

1.1 An Overview On Game-Based learning And Digital Game-based Learning

1.1.1 Game based Learning

According to Baranowski,T,Buday,R. game is a physical or mental contest with a goal or objective, directed by a framework or rules which determine what a player can and cannot do inside the game. The game can be defined as simply having two main characteristics that are rules in which the players are guided by and the interaction among them Klabbers(1999) defined games as an activity involving skills, knowledge in which you follow fixed rules trying to win against an opponent to solve a puzzle (Klabbers,1999:18).

1.1.2 Digital game-based learning

Digital game-based learning refers to “a system where players are engaged in an artificial conflict, defined by rules that results in a quantifiable outcome” (Salen&Zimmerman, 2004,p8). Digital game-based learning is about implementing the technological tools such as computers, tablets, and phones to engage learners and to develop new knowledge, skills and reach certain goals and outcomes. (Corti, K.2008).Thus, a well-designed game must keep learners attention and focus and provide rewards after completing the assigned tasks. Hogle (1996) pointed out that game-based learning is very helpful to achieve the learning outcomes and provide a lot of advantages such as : build the emotional and social skills of the learner ,foster collaborative learning among peers, develop the cognitive and problem solving skills, of the learner, “Increase retention of information through learning by game-playing” (Roussou,2004). Learners will use their own learning style and find solutions to the tasks that give them the opportunity to construct their knowledge. Digital games Provide instant feedback that enables learners to correct their mistakes, promote learners curiosity about the subject and self-confidence.

1.1.3 Input-Process-Outcome Game Model

Garris, Ahlers, and Diskell (2002) proposed an input-process-outcome game model to illustrate the internal transformation process of learners that games provide in the learning process. The model is divided into three steps (input, process, and outcome). The first step is the input which contains the characteristics and the instructional learning contents of the game

that should be well designed to stimulate the interest of the learner and should be related to the characteristics of game design (curiosity, challenge, control, and fantasy) . The second step is the cycle process of learners' behaviour, judgments, and system feedback. The game should be interesting and motivate for learners so they can complete the entire cycle and repeat it to achieve the required cognitive and emotional behaviors as a feedback of gameplay. The last step is the outcome of the game-based learning in this step learners mistakes should be corrected to achieve the learning outcomes.

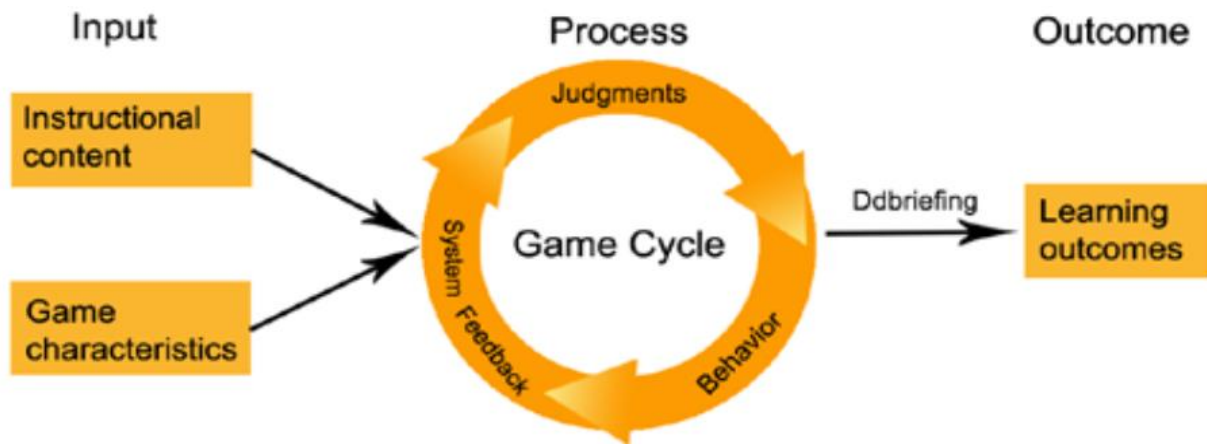


Fig. 1. Digital Game-Based Learning Model (Garis et al., 2002).

1.2 Characteristics of Digital Game-based Learning

According to Malone(1981), there are four elements of games that increase learners' engagement: fantasy, curiosity, challenge, and control.

Challenge: it takes into account the level of difficulty of the game and the goals which need to be meaningful and obvious for learners.

Fantasy: is the virtual world in which the activity takes place, it leads to greater interest on the part of the student as well as increased efficiency of learning.

Curiosity: It is the frequent presentation of information and outcomes, it is guided by space, time and rules. Prior to Malone curiosity contains two aspects: cognitive and sensory. The cognitive curiosity involves “the individual’s mental map of the world and ensuring that understanding is comprehensive” (Malone). Curiosity is well-perceived when the feedback is constructive. The sensory curiosity is the use of sensory stimuli such as light, sound, and colours.

Control: the player is in charge of controlling the game and solving the problems and different tasks. As stated by Malone and Lepper (1987) “control over the learning

environment” is estimated by three components: contingency; the logical interaction with the game. Choice; the availability of the options that are available in the game world. Power; the effective and appropriate decision made during the gameplay.

1.3 History of Digital Game-based Learning.

Digital game-based learning was first coined by Marc Prensky in 2001; he stated that digital game-based learning appeared in the last decades of the 20th century. The new generation of learners are surrounded by technology which affected their thinking and the way they process information that is totally different than their predecessors (prensky2001). The new generation of learners are generally visual learners; they prefer information presented as short videos, images and interactive software (Brown & fritz, 2001). Prensky2005 described them as “engage me or enrage me” learners. Teachers now are recommended to meet the learning style of the “digital natives” as named by Prensky, he meant by this student who are surrounded by technology and the manipulators of the new technologies. Prensky recommends that teachers have to implement technological devices such as computers or digital-based-games in the classroom to teach different subjects especially the dull ones.

1.4 Theories Underpinning Digital Game-based Learning

1.4.1 Constructivism

Constructivism is defined as an exploratory approach to learning. Students bring their prior skills and knowledge to the classroom and the teacher creates learning situations where Learners have the chance to interact with each other in order to develop their knowledge and abilities (Vygotsky). New skills and knowledge are better generated and developed through experience and within the context rather than in isolation. From the constructivist point of view learners are responsible for their knowledge acquisition, they engage in structuring and experiencing the new knowledge in order to make it comprehensible and permanent. Bruner (1966) proposed a constructivist learning paradigm which emphasizes the fact that “learning is an active process where learners build upon their past experiences and knowledge to advance their understanding “.Bruner (1966). Constructivism has three basic dimensions according to Savery& Duffy, 1995.

- Situated learning: where learners should be in an authentic context; based on a real and professional setting, so learning could be achieved via the interaction with the context.
- Cognitive challenge/puzzlement: it is learners ‘motivation that occurs when learners solve problems and find solutions.
- Collaboration: “where inter-learner discourse and dialogue provide a peer-review process of checking and validating understanding” (Savery& Duffy, 1995).

Vygotsky (1978), one of the pre-dominant figures in the field of social constructivism and particularly in the social collaborative aspects of learning. He assumed that learning takes place at a social level first and then at an individual level. According to Vygotsky “good learning” occurs in the zone of proximal development; it is the difference between what a person can do when working alone and what can achieve when working or being supported by another person. The ZPD is “performing a range of tasks that the person cannot yet handle alone but can accomplish with the help of instructors or capable peers” (Irina Verenikina 2010).

1.4.2 Collaborative Learning

According to many researchers, collaborative learning has a major role in knowledge acquisition, it permits students to exchange, discuss problems and find solutions. Knowledge is constructed through social negotiation; learners can evaluate and develop their understandings by negotiating different views. Dillenbourg (1999) highlighted four dimensions of collaborative environments (the situation, the interaction, the effect and the learning mechanism): the situation refers to a combination of a number of learners with homogeneous ability group. The interactions mean the effect of the environment upon the instant verbal communication in our negotiations, and instructions. Learning mechanisms means the appropriate re-interpretations of learner's actions in a safe way to other learner's actions.

The role of the teacher in the collaborative learning is the facilitator and advisor of the educational process; therefore, Learners are responsible for their knowledge construction and acquisition. (Nicola Whitton 2010).

1.4.3 Computer Games as Constructive Learning Environment

Learners can have the opportunity to construct new knowledge, to explore, to practise skills and to solve-problems through computer games (Thomas Connolly 2009). The appropriate selection of computer games is very essential to achieve the constructivist learning environment, such as working in collaboration that help students to develop their critical thinking, creativity, accept and respect the others ideas, preferences and skills (McConnell, 2000).

Honebein, 1996 proposed eight elements of constructivism that should be taken into account when designing educational immersive environment, the game should be “relevant and based on real-world scenario, be interactive, encourage collaboration, be cognitively challenging using puzzles and conflicts, use various modes of representation, make the learner aware of their own learning process and present multiple perspectives about the material to the learner” (Honebein, 1996).

1.5 Computer Games vs. Educational Games

Computer games or video games are generally defined as interactive software application designed for entertainment purpose (Rollings& Adams,2003).

The implementation of computer games in the context of education “games-based learning” is called “educational games”. Educational games aim to provide knowledge and develop certain skills.

Despite the fact that computer games and educational games have in common some features however they differ in the use, the context and the design of content. Salen and Zimmerman 2003 distinguishes computer games from educational games by the three schemas (play, rules, culture) presented in their conceptual framework.

1.5.1 Computer Games

Play: in the context of computer games is seen as an act of enjoyment and entertainment with objectives ruled by storytelling.

Rules: rules that guide the activity are designed for fun and enjoyment purposes.

Culture: the virtual world where the beliefs and norms are represented visually in an imaginary and often in an exaggerated way.

1.5.2 Educational Games

Play: play in the context of educational games is defined as meaningful learning activities that provide knowledge and develop cognitive skills.

Rules: are based on learning objectives and outcomes that are measured by the interactions during the gameplay.

Culture: the visual (objects, sounds, and music) presentation of beliefs and norms from real-world scenarios to facilitate knowledge acquisition, however, there are educational games that are set in a fantasy environment to increase the intrinsic motivation of learners according to Malone &Lepper (1987).

1.6 Principles of Educational Digital Game structure for Classroom Settings

Recently a number of Researchers and educators investigate the possibility of implementing digital games in the educational system to engage and motivate students in the classroom

Using digital games in the classroom settings can be a motivator strategy for learners, besides the characteristics of the digital game (challenge, curiosity,control, fantasy, collaboration, and competition) that are the attractive components for the learners (Young kyun Baek, 2010, p01)

The appropriate selection of games is very important to engage students and award them with fun. Therefore, games for classroom-based learning should be meaningful, meet the content and reach the objectives underlined by the teacher.

Gaming in the classroom promotes the experiential learning, prior to Dewey, experience “is a process, not an outcome”. It is the process (interaction)of learning and adapting to the surrounding environment. Games must contain actions and reflections based on social interactions (Young kyun Baek, 2010, p01)

1.7 Bloom’s Taxonomy of Educational Games

Bloom’s taxonomy is based on the appropriate choice of educational game genres which can develop the cognitive skills of the learners. His taxonomy helps to identify games according to their educational objectives.

Bloom divided educational games into four genres.

First, linear games, also known as “arcade” games the most popular type of games (Gee, 2003). Linear games use the linear logic . ”these type of games require only knowledge of information and well-structured problem-solving exposure to content interaction based on drill-and-practice learning ”(Rosas et al.,2003). Puzzle games are one of the popular linear games used by educators due to their simple and clear rules. The problem-solving ability is so high and they are easy to win, however, they necessitate developed fine-motor skills. Learners in linear games have the possibility to collaborate to solve a task or to compare their levels of success. (Young-Kyun-Baek,2010,p.04).

Competitive games are quite similar to linear games they often require developed fine –motor skills and a linear logic to solve the problems. Learners can play competitively or collaboratively controlled by a human or the computer known as “robots” or controlled by both; human and robots (Björk& Holopainen,2003). In this type of games, human players can choose the level of difficulty of the game. The difference between linear and competitive games is in the number of players that competing and willing to win the game.

Strategic games are based on managing a system and resources. In strategic games “players learn domain-specific content knowledge and apply that knowledge to complex problem-solving in an authentic context adding value to the learning experience” (Artino,2008).Similar to linear and competitive games, strategic games also require fine-motor skills. In this type of games, players need to have a strategy of play before start playing the game.

Role-playing games: in this genre players have to create a character with certain abilities. Those abilities will increase during the gameplay. In order to develop those abilities, the players have to pass different tasks and stages in the game. The RPGs develop collaboration and socialization of the player, they communicate via game text and discussion forums. (Schraeder, Lawless,andMcCreery, 2009).

1.8 Bloom's Taxonomy of Educational Objectives

According to Bloom (1956), there are three Fundamental levels of learning: psychomotor domain, the affective domain, and the cognitive domain.

-The psychomotor domain is the essence of any digital game and depends on the game's design.

-The affective domain is the emotional domain that the game uses to engage learners in the virtual world. The emotional domain is "a powerful learning tool" (Bloom1956).It has the power to engage the emotions of the learners.

The taxonomy of educational objective presented by Bloom is based on the cognitive development "the area where games have the most potential for educational application" (young-Kyun-baek,2010,p.11). The cognitive domain consists of six levels: knowledge, comprehension, application, analysis, synthesis ,and evaluation.

Knowledge is the ability to use the prior information that learners have. Comprehension means the ability of the learner to understand, process and paraphrase the information using their own words. The application requires the use of the information and knowledge in another context or situation .The analysis is the "deconstruction of the information" defining the components of the information and synthesize it to create new knowledge "the construction of the new knowledge". Evaluation is to evaluate and assess the credibility of the information (Nikola Whitton 2009).

1.9 Pedagogies in Game-based Learning

Game-based learning requires a specific way of teaching and a shift in pedagogy. When implementing digital game in the classroom the learning process will turn to learner-centred instead of teacher-centred approach .Teachers will act as facilitators of the learning process and allow their students to collaborate and construct their knowledge. Game-based learning imparts knowledge through productive gameplay. Therefore, games have specific learning approaches to be effective and productive when used as a new pedagogy in the classroom. These learning approaches are as followed: active learning, as sited by Thomas Connolly, refers to "the use of interesting activities to engage and maintain a learner's focus by encouraging participation during the lesson" (Thomas Connolly,2009, p.9). The activities should encourage and develop learners' autonomy by being responsible for their own actions and knowledge acquisition. And also encourage them to challenge the obstacles presented in the game world and find solutions. The experiential learning is based on the big amount of action and experience during the process of learning. Game-based learning sustains interactivity among learners governed by specific rules. In the gameplay learners will interact with objects represented in the virtual world and obtain responses to enrich their knowledge via interactivity. Thomas Connolly argued that the "Repeated use of each action provides greater understanding to learners how such action is useful in a number of situations to shape the learner's experience"(Thomas Connolly,2009, p.9). The last learning approach is the

situated learning that requires the presence of learners in a (real, social and or physical environment) where they can learn skills and knowledge through social and collaborative interaction. (Billett, 1996; Brown,Collins, &Duguid, 1989). The social and collaborative interactions among learners are presented virtually via game-based learning through online networking and/or non-player characters. They can learn from the virtual experience and apply it in the real situation regarding the opportunities that they have to test and examine their understanding of the subject. And this can only be done by a “mouse-click or a key- tap” (Thomas Connolly, 2009, p.9).

1.10 Emotional Intelligence

Emotional intelligence is defined as “the ability to identify and monitor one's own and others' feelings, to discriminate between them, and to use this information to guide one's thinking and behaviour ” (Goleman, (2008) &Mayer, (2008)).Emotional intelligence has four main abilities: the ability to identify oneself and others emotions, the ability to use those emotions in thinking and problem solving, the ability to control and manage oneself and others emotions, and the ability to understand those emotions.(John f. Kihlstrom & Nancy cantor 2012).

1.11 Emotional Intelligence in Education

There is a great relation between emotions and motivation (Shilling,1996) and both affect the learning process. Lawson (2012) underlined the relation and the importance of emotions in learning stating that “ Emotions are the relay stations between sensory input and thinking. When the input is interpreted positively, we are motivated to act and achieve a goal. When the input is interpreted negatively, we do not act and do not learn” Positive and negative emotions can affect the learning and should be taken into account. Negative emotions such as depression , fear, anger ,Anxiety..etc, “create a maladaptive and self-defeating pattern of behaviour, which prevents learning and stunts mental/emotional growth”.Lawson (2011). Negative emotions impact the memory and the cognitive process (Stege et al., 1994). Whereas positive emotions such as (sympathy ,joy ,amusement and interest)facilitates learning acquisition and help learners to reach their goals. Nelsons and low argued that in order to develop students' cognitive skills and effective behaviours “the emotional mind must be understood and considered central to education for the21st century”(Nelsons and low2006, p. 1).adding that students who are emotionally intelligent are “happier, cooperative and learn effectively”.(Nelsons and Low, 2005).

1.12 Emotions in Educational Games

Video games according to Lazzaro provide players with “ideas, memories, and learning create emotions during play and afterwards” (Lazzaro, 2004). Emotions appear when there is interaction and competition among players and among the game scenario, educational games can improve learners 'emotional intelligence, motivation and interest. Shilling (1996) claimed that games could develop learners emotional skills due to the strong relation between “emotions, gameplay and interactions “Shilling (1996).

1.13 Social intelligence

Social intelligence has a long history, it was first coined by Dewey in (1909) defining social intelligence as “the power of observing and comprehending social situations” (Dewey 1909).and then by Lull in (1911).Dewey and Lull theory of social intelligence was about the “morality and public education” their main interest was to revise the school curriculum and

to develop students social skills by engaging them in social norms. Thus, the new concept of social intelligence was coined by Thorndike in (1920) he included social intelligence in a model of human intellectual abilities; the ability to understand and manage ideas (abstract intelligence),concrete objects (mechanical intelligence), and people (social intelligence) (Thorndike 1920). Thorndike defined emotional intelligence as “the ability to understand and manage men and women, boys and girls to act wisely in human relations” (Thorndike1920.p228).

1.14 Social Interaction in Education

Dewey (1963) and Lindeman (1926) asserted that learning is a social activity .Learners collectively combine their knowledge and information in a social way to form the experience and to solve problems.(Wilkinson et al. (2010)). Social interaction is so important for learners. Routman (2005) claimed that “students learn more when they are able to talk to one another and be actively involved”(Routman 2005.p. 207).Routman(2003) also claim that “collaborative talk is a powerful way to make meaning” (Routman,2003).Through social interaction student construct their knowledge and the classroom became an active and engaging place for learners.

1.15 Social skills in Educational Games

The implementation of digital games in the classroom enhances learners’ motivation, active participation, engagement and promotes their concentration. Moreover, games can enhance students’ social skills and develop their skills in understanding and solving problems. (Kirikkaya, Iseri, &Vurkaya, 2010). Games offer endless opportunities for social engagement and peers interactions in educational settings in order to enhance learning. (Squire, 2006).

1.16 Conclusion

This chapter provided us with an overview about digital game based learning and social emotional skills. This chapter also examined theories and different views that support digital game based learning as a new pedagogy. In this chapter we included the principles, characteristics, taxonomy and pedagogies of learning and teaching with of DGBL. It also provided theories about social and emotional skills in education and in educational games.

Chapter two

2. Introduction

This chapter consists of the method and the methodology used to collect data concerning the use of digital game-based learning to develop social and emotional skills. Furthermore, this chapter presents the population, context of the study and data collection tools; questionnaire for both teacher and students, experiment and observation of learners' behaviors and attitudes before and during the use of digital game-based learning at the level of Ammor Djaloul middle school in Mostaganem.

2.1 Research Methodology

The main objective of the present research work is to investigate the credibility of digital game-based learning to enhance learners' social and emotional skills and both teacher's and learners' attitude toward the implementation of this new pedagogy at middle schools. From this insight, a set of issues have been raised to be investigated:

- 1-Can digital game-based learning develop students' social and emotional skills?
- 2-what are the learners' attitudes toward digital game-based learning?
- 3-what are the teacher attitudes toward the use of digital game-based learning as a new pedagogical tool in the classroom?

In order to answer these questions both qualitative and quantitative methods were used to collect data. The purpose behind choosing these two methods is that qualitative method seeks "to understand a given research problem...from the perspective of the local population it involves". Qualitative method also seeks for "participant observation, participant interview and to explore the phenomena"(Qualitative Research Methods: A Data Collector's Field Guide). Quantitative method was used to "confirm hypotheses about the phenomena, to quantify variation and give numerical values to responses via structured methods such as questionnaires, surveys, and observation". (Qualitative Research Methods: A Data Collector's Field Guide).

With this logic in mind, we have used the quantitative method to give numerical values to learners' opinions toward the use of digital game-based learning. Whereas, the qualitative method was used to cover teachers' perceptions of the benefits of digital games -based learning for teaching and learning in basic education, to enhance learners 'social and emotional skills in the learning process of English as a foreign language. The data collection instruments that were used in this case are: observation of learners' attitude in their usual learning environment and during the use of digital games in the learning process. The experiment was done to reinforce the validity of the work and to measure the dependent variable which are learners' performance and attitude. Finally, to obtain quantitative insights and statistical analysis, a questionnaire was delivered to the teacher and students in the form of close-ended questions. With limited frame options, participants are required to choose one answer from the given multiple choices that he/she feels is the appropriate one.

2.2 Participants and the Context of the Study

The study took place at the level of “Ammor Djeloul” middle school at Hassi Mamech Mostagamen. Two second year middle school tutorial sessions were chosen to conduct the study. The purpose behind choosing tutorial sessions is because of the small number of learners that helps us to observe their attitudes and behaviours and to conduct the experiment.

In order to construct our study, 65 pupils from two classes in middle school, and 01 teacher were selected in order to do our experiment, observation and to answer the questionnaire. The study lasted for four weeks in order to meet all the groups.

2.3 Research instruments

To collect data we have selected three different research instruments (observation, questionnaire and experiment) in order to validate and measure the credibility of our study.

2.3.1 Observation

For a systematic data collection, an observation was conducted for both two classes. According to David Scott and Marlene Morrison, “all education researchers apply observation in some form as it is their opportunity to listen, watch and record (and often share subsequently with informants) what informants say and do in specific educational settings and time frames”.(David Scott& Marlene Morrison, 2005, p168). The classroom observation will provide us with a rich understanding of learners’ behaviors and attitudes in their naturalistic setting and to investigate our hypothesis about the implementation of digital game-based learning in the classroom as a new pedagogy.

The observation was arranged with students at the level of second year middle school in tutorial session willing to observe their attitudes and behaviour using digital game based learning and their social emotional skills when working in groups.

2.3.2 Questionnaire

In order to collect data, two questionnaires were designed (one for students and one for the teacher). The teachers’ questionnaire was divided into three parts; the first part was about personal information, and the second part was about the use of technological devices in the classroom; then the last part was about teacher’s perceptions of the benefits of digital games - based learning. Students’ questionnaire was divided into four parts; the first was about personal information; the second part about the importance of the use of technological devices; the third part was about the learners’ use of technology and the last part is to examine learners’ social and emotional skills.

2.3.3 Experiment

As an essential part of our work, an experiment was conducted in order to test our hypotheses. The experiment was conducted through online activities over a period of two weeks at the level of second year middle school tutorial classes. According to Gay, L. R.

(1992), the experimental method is the only method of research that can truly test hypotheses concerning cause-and-effect relationships. It represents the most valid approach to the solution of educational problems, both practical and Theoretical, and to the advancement of education as a science (Gay, L. R,1992,p. 298).

2.4 Description of Teacher ‘Questionnaire

As a fundamental part of our data collection instruments, teachers’ questionnaire was designed to evaluate their attitude toward the use of digital game-based learning as a new pedagogical tool in the classroom. The questionnaire consists of 13 close-ended questions, divided into 03 parts. Each question aims at collecting specific information to support our hypotheses.

-The first part of the questionnaire contains the personal questions such as age, gender and work experience.

-The second part of the questionnaire involves the teacher Use of Technological Devices in the Classroom.

-The third part of the questionnaire was structured to address Teacher’s Perceptions of the Benefits of Digital Games -Based Learning.

Part two: In this section, the teacher is required to put a tick for the answer that he/she feels is the appropriate one.

Question 01: the aim of this question is to know whether the teacher uses technology in the classroom or not.

Question 02 and 03: this question aims to know which technological devices the teacher opts to use in his/her class and for which type of activities does he/she use them for.

Part three: in this section, the teacher is asked to specify to what extent he/she agrees to the given statements.

Question 04: this question attempt to evaluate the teacher s’ agreement about the role of technology in increasing the academic achievement of the learner.

Question 05: this question tends to assess teachers’ perception about the effectiveness of technology as a learning tool.

Question 06: it is structured to see whether the use of technology makes learning enjoyable according to the teacher.

Question 07 and 08: were devoted to see teacher’s opinion about the fact that technology can help him/her to better deliver the lesson and improve the quality of teaching.

Question 09: this question seeks to examine the teacher agreement about the utility of digital game-based learning in learning vocabulary and grammar.

Question 10 and 11: were about the role of digital games in enhancing learners' knowledge and skills.

Question 12: this question tends to perceive teachers view about the role of digital game based-learning in the classroom management.

Question 13: the last question aims to investigate teachers' perception of the use of technology.

2.5 Description of Learners' Questionnaire

The learners' questionnaire was initially constructed to measure their social and emotional skills and their attitudes toward the use of DGBL during the learning process. The questionnaire was developed to collect information about learner's use of technology and their opinions about the use of digital game based learning. The study surveyed 64 second year middle school students distributed into 02 classes (2m2 and 2m3) more precisely (tutorial classes). The questionnaire consists of 15 close-ended questions divided into four parts.

-The first part of the questionnaire comprise the personal information about the learner; gender, age and level.

-The second part of the questionnaire was assigned to determine the importance of the use of technological devices for the learner.

-The third part of the questionnaire was designed to target the Learners' use of Technology in the classroom.

-The fourth part was constructed to measure the learners' social and emotional skills.

Question01: the first question of this survey aims at evaluating the average use of the technological devices.

Question02: this question aims at knowing the type of technology that learners like to have more access to

Question 03: aims at knowing the purpose behind the use of technology.

Question 04 and 05: these two questions are structured to know the type of technology that pupils would like to have in the classroom and which one they learn from the best.

Question 06: the last question from the second part aims at evaluating the importance of technology according to the learner.

Question 07: this question was designed to evaluate the level of motivation about the use of digital games based learning.

Question 08: from this question, we seek to see if the learners enjoy learning when digital games are integrated in the classroom.

Question 09: this question tends to know the learners' preferences about the learning settings.

Question 10: this question seeks to measure the learners' participation in group work.

Question 11: the purpose behind this question is to seek from whom the learners ask for help when needed.

Question 12 to 15: these questions are structured to evaluate learners' social and emotional skills during the group work.

2.6 Description of Classroom Observation

In this part, we tend to observe teacher's strategies and learners' attitude, motivation and behaviour while working in groups to answer the given task.

2.6.1 Classroom observation: (2MS2)

Sequence 03 "me and my health"

Lesson: healthy food

Group one (17 students)

When we entered the classroom, the teacher and learners rearranged the classroom setting and formed the groups. After the students took their places, the teacher started reading a dialogue (a conversation between a doctor and a patient); she uses actions and gestures to facilitate and to convey the meaning. When the teacher finished reading and acting the dialogue, she said: "I am going to read the dialogue for the second time, now listen carefully and try to remember". Once she finished reading, she asked her students to repeat after her each line from the dialogue.

The teacher wrote the dialogue on the board with some missing words, and she asked her students to do the same thing on their copybooks. Afterward, the teacher asked them to work in groups and complete the dialogue with the missing words.

learners at first were working to gather in a collaborative way, but after few minutes they started making noise and giving up the group work without finishing the task. Once the teacher observed that, she said: "let's correct the task all together". As soon as they finished the correction, the teacher selected two students to practice the dialogue. A few minutes before dismissing the class, the teacher recommended her students to learn the dialogue by heart once they get home.

During this classroom we could observe that the teacher did not bother herself to identify the group work obstacles and the causes of ineffective group collaboration. We also observed that students' lack of collaborative skills affected the group work. The group members did not listen to each other's opinion interrupt each other and deny suggestions.

Group two 16 students

After getting to the classroom, the teacher and student rearranged the tables and formed the groups. The teacher asked students to remind her about the lesson of the last session, and the learners answered in single words, but the teacher asked them to form a complete sentence giving them an example “ chips are unhealthy food “.The question and answer session continued for a few more minutes.

The teacher wrote the task on the board. The task was: “I classify the following food in the table (healthy and unhealthy food)”and the teacher required her students to work in groups and classify the words in the table. The teacher promised them by giving plus one to the group who work to gather and finish the task first. This seems quite motivating for all the groups. Pupils start working in a collaborative way, the teacher moved around giving help and explaining for them the difficult words.

From this class, we could observe that learners worked in collaboration: they negotiated, discussed and interacted together. This could be due to the teacher’s authority in the classroom; moving around, checking their answers and proved help ,or because of the given reward or simply they are aware of the collaborative work.

2.6.2 Classroom observation (2MS3)

Group one 16 students

After taking our seats and rearranging the tables and forming the groups, the teacher asked the students to remind her of the dialogue that they had in the last session. Few students raised their hands and performed the dialogue. The teacher asked a student to write a new dialogue on the board. Once the students finished writing, the teacher read the dialogue three times for her students then she cleaned few lines that contained the new vocabulary related to healthy eating.

Afterward, the teacher asked her students to write the dialogue on their copybooks and start working in groups to complete the missing lines. The task was quite difficult for the pupils because they could not remember all the missing sentences. The teacher guided her students and provided instructions and explanations so that they could start filling the gaps.

From this class observation, we could notice that only two groups were working in collaboration discussing and negotiating meanings, whereas the other two groups were detached: talking, playing with pens and making noise. This detachment was due to the level of the task difficulty; they were all the time complaining about the given task.

Group two 15 students

As we entered the classroom and after rearranging the tables and forming the groups as usual, the teacher asked few questions about the last lesson to refresh the pupils’ minds, and then she asked a student to give her three types of healthy food and another student to give her three types of unhealthy food. Both students’ answers were correct.

The teacher wrote a list of different types of food on the board and she asked her student to do the same. The task was: “I classify the foods under the three headings (fat, sugar, salt) in the table. Some foods can be classified under different headings”. Once she finished writing, she asked her pupils to start working in groups as soon as they finished writing the task on their copybook.

After they have finished writing the task, they started working together. However, only two groups were collaborating and discussing the task whereas the other two groups seemed demotivated and discouraged to answer the given task.

What we could observe from this class is that the teacher did not try to motivate the other two groups who were discouraged and making noise. We also observed that pupils’ interest and motivation about the task did affect the group work.

2.7 Organization of the Experiment

In order to assess the effect of digital game-based learning integration on the learners’ attitudes, motivation and engagement of second year middle school students, we selected an online digital game from the “e-learning for kids” website. This website was chosen because the content of the game matches the syllabus of our population.

The experiment was conducted over a period of two weeks. Two second year tutorial sessions from “Ammour Djaloul” middle school classes have been selected to be the sample population of our study.

2.7.1 Materials

To conduct the experiment, we used 04 personal computers and a router to provide the accesses to the internet

2.7.2 Description of the game

To start playing the game, learners needed to follow several steps.

Step one: login to the website of e-learning for kids, select the desired topic and the grad of the game.



Step two: in the second step, the learners had to enter their full name to get started.



Step three is the welcome stage. It introduces the aim of the game (to learn about the food you need to eat).

The welcome stage provides a sense of joy and interest to the learner.



Step four: the fourth step is a short lesson about healthy food. Students are going to learn about different types of healthy food and learn how to classify them according to their components.



Step five: the fifth stage is a game, called the “rocket game”. Learners have to select the food and put them in the correct food group on the pyramid. The game is guided by Time (The clock will determine how fast the group is in selecting food).



Step six: a short lesson about healthy meal. Students will learn about the type of food they need to eat in each meal (breakfast, lunch, dinner, snack).



Step seven: It is a game, learners will travel to breakfast Planet, lunch planet, snack moon and planet dinner. They have to select healthy food from different food group for each meal to get to each planet. Pictures Of food will appear on the screen.



After completing all the stages by selecting healthy foods, the learners will have a certificate as a reward.



2.8 Experiment procedures

Sixty five students of an age ranging from 12 to 14 years old from two second year middle school classes have been selected to be the participants in our experiment.

The experiment was conducted during the tutorial session; the class was divided into two groups. Each group was made up of 15 to 17 students. In order to conduct our experiment, we created 04 small groups. Each group consists of 04 to 05 students.

The objective of the game is to learn the different type of healthy food they need to eat in each meal (breakfast, lunch, dinner, and snack) and to learn how to classify them according to their components.

After getting to the classroom, four groups were formed. Each group consists of four to five students. One personal computer was given to every group. Before starting the game, we explained for them the procedures and the aim behind this game.

The first step learners were asked to do is to choose a group name in order to start the game. They were required to listen carefully to the explanation of the lesson so that they can do the activities that follow the lesson. In order to reinforce the group work and motivate them to work in collaboration, negotiate, respect each other and listen to each other's opinion we told them that we would observe you while working together and the winning group would get a certificate due to their collaborative work.

2.9 Classroom Observation discussion

After observing learners in their naturalistic setting and during the game play we could determine two main aspects that are:

2.9.1 Motivation and Engagement

Motivation is very important in the learning process for learners' achievement. It is the key to success. Motivation increases learner's interest and encourages them to complete the task, participate in the classroom, perform better and enjoy learning. Motivation can be intrinsic or extrinsic. Eccles et al., 1998 made a distinction between the two type of motivation and

claiming that “intrinsic motivation, in which students are motivated to do an activity for its own sake, and extrinsic motivation, in which students are motivated to do an activity for instrumental or other reasons, such as receiving a reward“(Eccles et al., 1998).The intrinsic motives in the digital games are the main elements of the game that are: curiosity, challenge which is characterised in game’s difficulty, and fantasy characterized in animations and music. (dondlinger,2007).The extrinsic motive is the certificate that they will get at the end of the game .

In addition to motivation, learners’ engagement was widely observed. Games should achieve and promote the cognitive engagement of learners so they can reach their learning goals (Plass et al 2005). There are four types of engagement that should occur in educational games, cognitive engagement that is related to “mental processing and metacognition”, affective engagement “emotion processing and regulation», behavioural engagement “gestures, embodied actions, and movement” and sociocultural engagement “social interactions, collaborative play support sociocultural engagement”(Domagk, Schwartz, &Plass, 2010). Educational games develop the socio-emotional skills embedded into team work, collaboration, creativity, communication and problem solving skills needed for the learner to acquire new knowledge (Plass et al 2015).

2.10 Conclusion

In this chapter we presented the methods and the methodologies that we used in order to collect data and the objectives behind our study. We also underlined the context of the study, the target participants and the experiment procedures. The results of our survey will be further discussed and analysed in the following chapter.

Chapter three

3. Introduction

This chapter is devoted to present the data analysis and interpretation of the findings. The qualitative and quantitative methods will be used in order to analyse the answers of our questionnaire that was addressed to both teacher and learners to know their attitudes toward the use of digital game-based learning at the level of second-year middle school. And to evaluate our hypothesis about the fact that digital games can promote social and emotional skills, through the data collection instruments (observation, experiment, and questionnaire).

3.1 Questionnaire analysis

This session will present the findings of the study and the analysis of both teacher and students questionnaire. Analysing their answers and converting them into statistics. This part will be divided into two sub-parts, at first we will analyze learners questionnaire and then in the second part we will analyze teacher questionnaire.

3.1.1 Learners questionnaire analysis

Part one: personal information.

Option	Class one		Class two	
	Number	Percentage %	Number	Percentage %
Male	12	37.5	11	33.33
Female	20	62.5	22	66.66

Table 01: learners' gender

The table above shows that Classroom one consists of 32 students, 37.5% of them are males and 62.5% are females. And that classroom two consists of 33 students, 33.33% males and 66.66% are females. What is observed from this table is that the majority of our population are females.

Option	Classroom one		Classroom two	
	Number	Percentage %	Number	Percentage %
12 years old	08	25	13	39.39
13 years old	21	65.62	16	48.48
14 years old	02	6.25	03	9.09

Table 02: students' age

From this table, it can be observed that there is a significant difference in learners' age. The majority of them their age is 13 years old; 21(65.62%) students in the classroom one and

16(48.48%) students in the classroom two. However, the minority aged 12 years old, 8(25%) in the classroom one and 13(39.39%) in the classroom two. Whereas only 05 students from both classes their age is 14 years old.

Part two

Q1: how often do you use technological devices?

Answer	Number	Percentage
Always	29	18.56
sometimes	17	10.88
weekly	08	5.12
Often	02	1.28
Not very often	08	5.12

Table 03: students’ use of technology

From the above table, we can see that 29 students (18.56%) of the total number said that they always use technological devices. 17 students (10.88%) claim that they sometimes use it. Whereas 08 students representing (5.12%) of the population said (weekly, not very often) and only 02 students proclaimed that they often use technology.

Q2: what technological devices would you like to have more access to?

Answers	Number	Percentage
Smart phone	14	8.96
Tablet	28	17.92
Laptops	17	10.88
Desktop computer	06	3.84

Table04: students’ technological preferences.

It is apparent that 17.92% of the total number of students has claimed that they would like to have more access to tablets. The second device was the laptops with a percentage of 10.88%. 8.96% have selected smartphone and only 3.84% of the population selected desktop computer to have more access to.

Q3: what do you use technological devices for the most?

Answers	Number	Percentage
Research	10	6.4
Entertainment	20	12.8
Playing games	24	15.36
Watching video	11	7.04

Table05: learners’ use of technological devices.

This question was designed to know what do learners use technology for the most. The majority of learners 24 with the percentage of 15.36 % use technology for playing games and 12.8% use it for entertainment. However only 10 students with the percentage of 6.4% use technology for research.

Q4: what technological devices would you like to have in the classroom?

Answers	Number	Percentage
Smartphone	04	2.56
Tablets	26	16.64
Laptops	29	18.56
Desktop computer	06	3.84

Table06: learners' technology preferences in the classroom

When asking them about what technological devices would you like to have in the classroom, 29 out of 65 students have selected laptops with the percentage of 18.56%. Tablets were selected by 26 students with the percentage of 16.64% as technological devices that they would like to have in the classroom. Whereas, 2.56% have selected smartphone and 3.84% have selected a desktop computer.

Q5: how important is technology

Answers	Number	Percentage
Very important	45	28.8
Not very important	13	8.32
Not important at all	07	4.48

Table07: learners' opinion about the importance of technology.

Concerning this question, how important is technology, 28.8% out of the total number said that it is very important and 8.32% said that it is not very important, while 4.48% said it is not important at all.

Part three:**Q1: how do you feel when your teacher uses digital games in the classroom?**

Answers	Number	Percentage
Very motivated	40	25.6
Not motivated	25	16

Table08: learners' feeling about the use of digital games in the classroom.

After asking this question, as it is apparent that 40 students with the percentage of 25.6% stated that they feel very motivated when their teacher uses digital games in the classroom, however, 25(16%) students stated that they do not feel motivated.

Q2: do you enjoy learning when digital games are integrated into the classroom?

Answers	Number	Percentage
Yes	41	26.24
No	24	15.36

Table09: learners' enjoyment about the integration of DGBL in the classroom

This question aimed at knowing if learners enjoy learning when digital games are integrated in the classroom. The majority of them with the percentage of 26.25% said “YES”, while 15.36% of them said “NO”.

Part four:

Q1: do you prefer working independently or in the group?

Answers	Number	Percentage
Independently	34	21.76
Group	31	19.84

Table10: learners’ work preference

Regarding this question, we can see that there is a small difference between the selected answers. 34 students out of the total number representing 21.76% prefer working independently whereas 31 students with the percentage of 19.84% prefer working in group.

Q2: how often do you participate in group/pairs tasks?

Answers	Number	Percentage
I do not	09	5.76
Rarely	32	20.48
Often	21	13.44
Very often	03	1.92

Table11: learners’ participation in group/pair tasks.

As the table above exhibit, the majority of learners with 20.48% claimed that they rarely participate in group or pair work. However, only 13.44% of the students stated that they often participate in group or pair work. The minority with the percentage of 5.76% said “I do not” and only 1.93% said “very often.

Q3: when you are given a task, how often do you stay focused?

Answers	Number	Percentage
Not at all	10	6.4
Rarely	26	16.64
Often	21	13.44
Very often	07	4.48

Table12: learners’ focus on the given task

Regarding this question, it is clearly noticed that 26 students with the percentage of 16.64 proclaimed that it is rare when they stay focused on the given task. Learners who answered “often” their percentage was around 13.44% that is 21 learners. Yet 6.4% said not at all and 4.48% said very often.

3.1.2 Teacher questionnaire analysis

The second questionnaire was addressed to one teacher that was responsible for teaching our experimented classes.

Part one: personal information.

The teacher is a female with 05 years work experience.

Part two

Q1: do you use technological devices in the classroom? Yes No

Concerning this question, the teacher selected “no” as an answer.

Q2: what technological devices would you like to have in the classroom?

As for this question, the teacher was given four different technological devices and she was asked to select one. The selected device was the “laptops”.

Q3: what type of activities do you use them for? Grammar or vocabulary

She answered that she uses technology to teach vocabulary.

Part three: In this part, the teacher was given ten different questions about the use of technology and digital game-based learning in the classroom, and she was requested to specify to what extent she agrees to the given statements.

Statements	Strongly agree	agree	disagree	Strongly disagree
1-The use of technology increases the academic achievement of the learner	√			
2- Technology is an effective learning tool for students.	√			
3Using technology makes learning enjoyable for students.		√		
4- Technology helps the teacher to better deliver the lessons.			√	
5- Technology improves the quality of teaching (for good result).			√	
6- Digital game-based learning is useful for students (in learning vocabulary and grammar)		√		
7- Using digital game-based learning in the classroom can improve students’ knowledge and skills (collaboration, critical thinking, problem-solving, social and emotional skills...).		√		
8- Digital game-based learning encourages the student to communicate more with each other.	√			

9- Digital game-based learning can help the teacher in the classroom management			√	
10- the use of technology is a waste of time				√

Table13: teachers' answers

From the table above we can observe that the teacher strongly agrees to the statement one, two and eight, whereas she agrees to the statements three, six and seven. The teacher show here disagreement to the statements four, five and nine while she claimed that she strongly disagree with the statement number ten.

3.2 Discussion of the main results

3.2.1 Results of learners questionnaire

In this section we will be discussing the main results of our collecting data instruments, questionnaire, observation and the experiment. After collecting data it was found that the majority of our population are females, 42 female out of 65 students with the percentage of 64.61%. Gender in our case may have a major role. Generally, males are the gamers they spend more time playing games for entertainment and prefer to compete with each other than females who are more social and team workers. And the idea of implementing games in the classroom may motivate males more than females. However, the game design in our study was different from the usual ones. Both genders show a positive attitude toward the game and the collaborative learning. As it is mentioned in the table (2), learners' age is in between 12 and 14 years old. Learners in this age are known as "digital natives" or "net generation" they are good manipulators of technological devices because they are 21st-century citizens; they spend much time using technology for entertainment. The second part of the questionnaire was assigned to determine the importance of the use of technological devices for the learner. Questions from 1 to 6 show different opinions and attitudes about the use of technology. In the first question, the majority of learners 18.56% said that they always use technology and 10.88% said sometimes. The technological device that the majority of learners 28 out of 65(17.92%) want to have more access to, was "tablets" and the second device that was selected by 17 (10.88%) learners was "laptops". 15.36% of the total number of the participants confess that they use technology to play games and 12.8% for entertainment. Concerning this question 'what technological device would you like to have in the classroom' 18.56% have selected "laptops" and 16.64% have selected "tablets". 45 students representing the percentage of 28.8% admit that technology is "very important". The third part of the questionnaire was designed to investigate learners' motivation about the use of digital games in the classroom. 25.6% of students declare that they feel "very motivated" when their teacher uses digital games in the classroom and 16% of students stated that they do "not feel motivated". The answers to the second question of this part were divided between "yes" and "no". The majority of learners 26.25% said "yes we do enjoy learning when digital games are integrated into the classroom and 15.36% said, "no we don't enjoy learning when digital games are integrated into the classroom".

The last part contains a set of questions concerning learners' social and emotional skills. The answers are as follows. 21.76% from the total number of students prefer working independently and 19.84% of students prefer working in groups, as it is observed there is a small difference between the two answers. The very minority of learners with the percentage of 1.93% admit that they "very often" participate in group work, 13.44% said "often" and 20.48% said

"rarely" and 5.76% said "I do not" participate in group work because of the lack of motivation and group work skills. Concerning learners' focus during the task, 13.44% claimed that they "often" stay focused during the task and 4.48% said, "very often". Most of the learners with the percentage of 16.64% said that they "rarely" stay focused and it is due to the deficiency of interest.

3.2.2 Results of Teacher's questionnaire

A set of questions were designed to evaluate teacher perspective about technology and digital game-based learning in the classroom.

We had a conversation with the teacher concerning the use of technology in the classroom. This conversation helped us in analysing the questionnaire and knowing the reasons behind the selected answers. The answers are interpreted and analysed as follows:

The first question that was addressed to the teacher was "do you use technological devices in the classroom? Yes or No. the response of the teacher was NO,

The reasons behind not using technology in the classroom is that the teacher has a limited knowledge about it, the teacher claimed that she found great videos and songs that will certainly help in facilitating the lesson and motivate students but she does not know how to download it.

Technology can facilitate content comprehension and maintain attention and concentration, thus, the teacher "strongly agrees" that the use of technology increases the academic achievement of the learner.

The use of technology promotes learners' engagement in the classroom and enables them to be more active and responsible for their learning experience. Therefore, the teacher "strongly agrees" on the fact that technology is an effective learning tool for students.

Technology creates a new learning atmosphere in the classroom, motivates learners and grasps their attention and interest. The teacher agrees on the fact that using technology makes learning enjoyable for students.

The teacher disagrees with the statements 5 and 4 claiming that, it is not necessarily that technology helps the teacher to better deliver the lessons and that technology can improve the quality of teaching (for good results).

During the experiment the teacher shows her enthusiasm toward the use of digital games, she appreciated learner's positive feedback about the vocabulary that they have acquired and their

positive behaviour during the game play. Therefore, the teacher “agreed” with the statements 6 and 7.

After observing their attitudes while working together, communicating and negotiating meanings the teacher (strongly agreed) with the statement number 8 (i.e. Digital game-based learning encourages the student to communicate more with each other).

Even though learners were motivated and engaged during the game play. The teacher “disagrees” with the statement number 9 (i.e. digital game-based learning can help the teacher in the classroom management) and claiming that digital games cannot help control disruptive behaviour of students during the lesson.

3.2.3 Results of the Observation

Observing learners during their naturalistic setting for four weeks (one hour per each group) provided us with lot of information about learners and teacher daily attitude and behaviour during the tutorial session and their attitude towards the group work tasks, their communication, co-operation, negotiation and problem solving skills. The main elements that we could observe during our attendance are: The majority of the learners were demotivated, detached and making noise, the lack of collaborative and problem solving skills which affected the group work. The deficiency of the social and emotional skills was clearly observed. Learners lack of empathy (learners’ awareness of their mates feelings). The non-communicativeness of the learners (the skill of listening to each other’s opinions and turn taking). The lack of collaboration and co-operation between the group members to complete the task.

3.2.4 Results of the Experiment

The experiment was successfully conducted with our 65 second year middle school learners. Learners and teacher appreciated the implementation of the digital game based learning as a new pedagogical tool and show their interest toward it regarding another chance to have it in their classroom. The behaviour of learners has changed during the game play, they become more interested and motivated to accomplish the given task, more collaborative and engaged in the group work. Group members show a kind of respect and acceptance of each other’s opinions and feelings due to our instructions and social and emotional skills explanations and clarifications of its important role in their educational achievement and their daily life.

3.3 Conclusion

This chapter has provided us with main results that occur within our data collection instruments concerning the implementation of digital game based learning in the classroom to enhance social and emotional skills of the learners. Throughout this chapter we could determine learner’s high familiarity with technological devices, the positive attitude of teacher and students toward digital game-based learning, learner’s collaboration, communication and motivation during the game. And a development in learners social and emotional skills.

General conclusion

The aim of the present dissertation is to investigate learners and teachers' attitude toward digital game based learning and its role in enhancing learner's social and emotional skills at the level of second year middle school. Our dissertation is divided into three chapters; an overview chapter, methodology chapter and data analysis chapter.

The first chapter presents the theoretical background of digital game-based learning and the role of social emotional skills of the learner, we also discussed the characteristics, the objectives and the pedagogy of digital game based learning.

The second chapter dealt with the method and methodology used to collect data concerning our study that was conducted at the level of second year middle school. In this study, we have used three types of research instruments; questionnaire, classroom observation and experiment. The questionnaire was handed to the teacher and students with the aim of investigating their opinions about technology and digital game based learning as a new learning tool implementing in the classroom. The observation of learners' behaviour during their regular leaning process and during the use of digital game based learning. The experiment was conducted in order to evaluate learner's attitude.

The third chapter contains the qualitative and quantitative analysis and interpretation of the main results conveyed from data collection instruments (questionnaire, observation and experiment) about learners and teacher attitude toward digital game based learning and learners social emotional skills. positive attitudes were determined through the experiment and observation and validated via the questionnaire. Learner's social emotional skills were partially enhanced.

As a main core of any research, a set of hypotheses should be raised. Our proposed hypotheses have been validated. First we hypothesised that both teachers and students will show an interest and positive attitude toward the use of digital game based learning in the classroom. Throughout our experience and data collection analysis the first hypotheses was validated. Both teacher and students were motivated and excited to try this type of new learning method. Second, we hypothesised that digital game based learning can support the development process of students' social emotional skills, this hypothesis has been proved .students were encouraged to work in teams, discuss and negotiate meaning, thus improving their social emotional skills.

While conducting our study we faced some limitations. The teacher was absent for two weeks which slowed our work process. The second issue was the design of the time table; in order to meet both groups we had to wait for 2 weeks (to meet the second group for each class). The study at first was planned to be conducted with first year middle school but unfortunately the teacher that was responsible for teaching the first year classes did not allowed us to do our observation and experiment during his classes.

For a great implementation of digital game based learning into the classroom and for a better promotion of both social emotional skills of learners our recommendations are as follow.

- Designing own digital games: digital games that are available on the net may not fit your learner's level or achieve your desired goals behind implementing it in your classroom. It is recommended to design a game for your own self to meet your educational objective and match the programme.

- Promoting social emotional skills: social and emotional skills are very important in knowledge acquisition and academic achievement for 21st century learners (citizens). It is recommended that teachers work more on their learners social and emotional skills by implementing new strategies such as grouping tasks, guessing games. such tasks promote learners sociability and create a new atmosphere full of collaboration and satisfaction.

As for suggestions, we propose that one can work on the same topic however focusing on the use of digital game based learning to teach vocabulary and grammar at the level of middle schools and targeting a large population of students and teachers for more accurate and validate results.

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Appendixes

Appendix 1: learners' questionnaire

This survey is conducted to determine the learner's attitudes towards digital games based learning as a new pedagogy tool to enhance social and emotional skills in the learning process of English as a foreign language. Your responses are greatly appreciated.

Part one: Personal Information.

Gender: male female

Age:

Level:

Part two: the Importance of the Use of Technological Devices

1-How often do you use technological devices?

Always sometime weekly often not very often

2-what technological devices would you like to have more access to?

Smart phone tablets laptops desktop computers

3- What do you use technological devices for the most?

Research entertainment playing games watching video

4- What technological devices would you like to have in the classroom?

Smart phone tablets laptops desktop computers

5- What technological devices do you learn from the best in the classroom?

Smart phone tablets laptops desktop computers

6-How important is technology?

Very important important Not very important

Not important at all

Part three: Learners' use of Technology

2-How do you feel when your teacher uses digital games in the classroom?

Very Motivated Motivated Not motivated

3- Do you enjoy learning when digital games are integrated in the classroom?

Yes no

Part four: Social and Emotional Skills

1-Do you prefer working independently or in group

2- how often do you participate in group/pairs tasks ?

I do not. Rarely often very often

3-When you need help do you ask your

Teacher friend no one

4-When your group members suggest an answer , you

Accept refuse look for another one

5-when you are given a task, how often do you stay focused?

Not at all rarely often very often

6- When your friend bothers you , how often do you stay calm?

Not at all rarely often very often

Appendix 2: teachers' questionnaire .

This survey is conducted to investigate the teachers' perceptions of the benefits of digital games -based learning for teaching and learning in basic education, to enhance learners' social and emotional skills in the learning process of English as a foreign language .Your response is greatly appreciated.

Part one: Personal Information:

Gender: male female

Work Experience:

Part two: the Use of Technological Devices in the Classroom

1- Do you use technological devices in the classroom?

Yes no

2- What technological devices would you like to have in the classroom?

Smart phone tablets laptops desktop computers

3-What type of activities do you use them for?

Grammar Vocabulary

Part three: Teacher’s Perceptions of the Benefits of Digital Games -Based Learning

Please specify to what extent you agree to the following statements:

Statements	Strongly agree	agree	disagree	Strongly disagree
1-The use of technology increases the academic achievement of the learner				
2- Technology is an effective learning tool for students.				
3Using technology makes learning enjoyable for students.				
4- Technology helps the teacher to better deliver the lessons.				
5- Technology improves the quality of teaching (for good result).				
6- Digital game-based learning is useful for students (in learning vocabulary and grammar)				
7- Using digital game-based learning in the classroom can improve students’ knowledge and skills (collaboration, critical thinking, problem solving, social and emotional skills...).				
8- Digital game-based learning encourages student to communicate more with each other.				
9- Digital game-based learning can help teacher in the classroom management				
10- the use of technology is a waste of time				

