Israeli Primary School Teachers’ Attitudes towards Using Digital Educational Games in Classroom: Empirical Study

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Abstract: This study investigated the Israeli primary school teachers’ attitudes towards using digital educational games in classroom. Through adopting a descriptive analytical approach, the required made sure that the goals of this research. The researcher employed the purposive sampling method for selecting a sample. The selected sample consists from 300female and male primaryIsraeli primary school teachers. Those teachers were selected from 25 primary schools, Those schools are located in the Northern District in Israel. Questionnaire forms were distributed via email to the selected teachers. 288 forms were retrieved. The response rate is 96%. Through the use of the SPSS software, the data collected from the sampled teachers were analysed. The researcher concluded that Israeli primary school teachers show positive attitudes towards using digital educational games in classroom. Such use improves students’ leadership, problem solving and critical thinking skills and raise their self-confidence and academic achievement levels. However, it doesn’t allow instructors to identify the extent of progress achieved by learner. The researcher recommends providing teachers in Israel with professional development courses about modern teaching methods and the significance of employing digital educational games.

Keywords: Israel, primary schools, attitudes, digital games, classroom

1. Introduction

Playing is a significant aspect of anyone’s childhood. For instance, through playing, the child gets the opportunity to explore the surrounding environment. He/she also gets the opportunity to interact socially with others. In other words, without playing, one can’t develop normally in social, cognitive and emotional aspects. In addition, playing allows children to explore the validity of their ideas. It allows children to come up with new ideas and challenge them to solve problems. It allows children to develop their symbolic thinking. That shall improve their ability to find the links between items and concepts in real life (Guyton, 2011).

Due to the significance of playing games in one’s life, educational games are used in many classrooms and lecture halls worldwide. They refer to the games that may aim at teaching people about certain subject, and reinforcing their development in specific areas. Such games may aim at letting them acquire more concepts, and understand a specific culture or event. They may aim at developing specific skills (Shanmugam et al. 2008). According to Jaffé (2006), the use of educational games aims mainly at enabling students to develop a specific skills or learn specific pieces of information (Jaffé, 2006). The use of such games has several advantages. For instance, it contributesto improving the students’ language skills and their skills in comprehending the texts. That’s because games offer students opportunities to practice the language and listen to the teacher while he/she is using it. It’s because games offer students the opportunities to read and analyse texts and answer questions about them in an entertaining manner (Bayoomi, 2021).

The use of educational games contributes to encouraging students to engage in discussions (Alabbasi, 2018). It also improves their discussion skills. That is because the use of such games generate many discussion opportunities. It’s because teacher can ask students to discuss the reasons behind selecting certain options in the game. The use of educational games contributes to improving the retention and recall skills. That is because the information acquired through applying it in a game shall be saved in the students’ long term memory (Bayoomi, 2021).

However, during the last couple of decades, numerous technological developments were reached. Due to such developments, teachers, parents and instructors today use digital games to teach students. Digital games: They refer to the games that are played through using a software (Alpert, 2007) Learners can run such games through opening a web browser on a computer, mobile phones and other ICT device (Willoughby, 2008). They may include: word search, jigsaw puzzles, crossword, brain teasers and sliding puzzles (Zirawaga et al., 2017). They may be used in history, language, science and etc.courses (Boeker et al., 2013; Zirawaga et al., 2017; Bayoomi, 2021).

There are several elements for digital educational games. Such elements include: goals, rules, feedback, and engagement (McGonigal, 2011). There are several advantages and benefits for the use of digital games for learning. For instance, such use improves students’ ability writing skills and ability to express themselves in writing. That’s because many digital educational games aim at letting students write by their own hands and do a task that requires writing (Ismail and Khalil, 2018).

Using digital games for learning shall contribute to improving the learners’ critical thinking and problem solving skills. That’s because many digital games employs elements that are found in environments that can’t be reached. It’s because digital games provide students with virtual experiences that are difficult to acquire.
Acquiring such experiences shall improve students in intellectual areas. In addition, use of digital games for learning improves students’ motivation to learn about the targeted content. That’s because the playing process shall turn the learning experience into an enjoyable experience. It’s because students prefer game-based learning more than the lecturing-based learning (Zirawaga et al., 2017).

Since the use of digital games for learning motivates students to learn (Felszeghy et al., 2019), students shall show a higher academic achievement. They shall also show a higher level of concentration because they shall show interest in the teacher instructional style. In addition, using digital games for learning shall increase students’ engagement in the learning process. That shall make the students become active learners. However, through employing lecturing-based learning method, learners won’t receive opportunities to engage in learning. Thus, students shall become passive learners who don’t have any role in their learning process (Zirawaga et al., 2017)

To make sure that digital educational games meet the intended educational goals effectively, there are criteria that must be met. For instance, such games must be challenging in order to keep the students motivated while learning. They must be goal-oriented. The game must shed a light on concepts and content that are considered clear and comprehensible for the targeted students. Thus, the developers of digital educational games must take the students’ age, achievement level and grade into consideration. In addition, they must make sure that the rules of such games are simple rather than complex. That’s because if the students didn’t understand the rules of the game, they won’t be able to engage and play effectively (Ismail and Khalil, 2018).

In addition, to make sure that digital educational games meet the intended educational goals, the teacher must guide the process of playing digital educational games. There must be rewards for the ones who win. Otherwise, students won’t be motivated to exert effort to implement their knowledge (Ismail and Khalil, 2018). In addition, the aforementioned developers must take the child’s interests and skills into consideration, because not all children are capable of playing the same games. They must develop games in a manner that contributed to developing children in cognitive areas (Guyton, 2011).

When reviewing the relevant literature, it can be found that there is a debate over the effectiveness of using digital games in learning. For instance, Tham & Tham (2014) found that using digital games in learning shall not lead to improving students’ motivation to learn nor increasing the engagement of students in the process of learning. However, McGonigal (2011) found that using digital games in learning shall increase the engagement in the learning process. Ending this debate requires conducting more research. Thus, the problem of this study is represented in investigating the Israeli primary school teachers’ attitudes towards using digital educational games in classroom.

2. Objective
This study investigated the Israeli primary school teachers’ attitudes towards using digital educational games in classroom

3. Question
This study was carried out to offer a detailed answer to the following question:
What are the Israeli primary school teachers’ attitudes towards using digital educational games in classroom?

4. The Study’s Significance
Through carrying out this study, decisions makers in Israel are provided with information about the effectiveness of using digital games in Israeli primary schools. Providing the latter decisions makers with such information shall contribute to developing plans that foster the professional development of teachers. It shall allow such decisions makers to take decisions that make reforms to the primary school educational system. It shall allow developers of curricula of Israeli primary grades to identify whether they should add instructional activities that are based on digital games.

5. Limits
This study was conducted during the first semester of the academic year (2020/2021). It targets Israeli primary schools.

6. Definition of Terms
6.1. Theoretical definitions:
Educational games: They refer to the games that may aim at teaching people about certain subject, and reinforcing their development in specific areas. Such games may aim at letting them acquire more concepts, and understand a specific culture or event. They may aim at developing specific skills (Shanmugam et al. 2008)

Digital games: They refer to the games that are played through using a software (Alpert, 2007) Learners can run such games through opening a web browser on a computer, mobile phones and other ICT device (Willoughby, 2008).
Attitude: It’s represented in having negative tendencies or positive ones towards a certain item, individual, idea or situation (Stark et al., 2013).

6.2. Operational definitions
Attitude: It’s represented in the Israeli primary school teachers’ attitudes towards the use of digital games in classroom for teaching students

Digital educational games: They refer to the games that are played through using a software at classrooms in Israeli primary school through using a software. They are played in the aim of expanding students’ knowledge, reinforcing their developing and providing them with more knowledge.

7. Theoretical framework
7.1. Barriers hindering the use of digital games in learning
However, there are barriers hindering the use of digital games in learning. For instance, it’s challenging to find an effective e-learning platform to play the digital game through. In addition, the use of such games has negative impacts on one’s health. Such impacts include: eye strain. The use of digital games for learning requires having technologies that are expensive (Zirawaga et al., 2017)

There are other barriers hindering the use of digital games in learning. For instance, some teachers lack the skills and knowledge need for using digital games in a manner that meets the intended educational goals. For instance, they may be incapable of choosing the digital games that fit with the academic level, age and skills of students. In addition, some teachers lack confidence in their skills and knowledge which are needed for such use. Such lack of confidence shall discourage those teachers from using digital games. To add more, some beneficial digital educational games are costly. That shall hinder teachers from getting them (Li, 2017).

The short duration of the period in school shall hinder teachers from using digital games. Due to the shortness of the period, teachers must utilize every minute of the period to cover the curriculum material. Some students also suffer from low computer literacy. That shall hinder the latter students from engaging actively in digital games in classroom. In such a case, the learning goals shall not be met by all students in classroom (Li, 2017).

7.2. Advantages of using digital games for learning
Using digital games for learning serves as a student-centred strategy, because it requires from students to engage actively and effectively in the process of knowledge production. It improves the digital literacy of the targeted students. In simple words, it improves the students’ ability to search for information through using ICTs and having its analysed. That’s because playing digital games shall provide students with many opportunities to use ICTs. In addition, using digital games for learning improves students’ learning skills. It contributes to simplifying reality in a manner that allows students to acquire scientific knowledge and other types of knowledge in a quick easy manner. They allow students to develop strategies for solving the problems he/she faces. That’s because digital games challenges students to produce and implement knowledge efficiently to win such games (Gros, 2007).

Using digital games for learning raises students’ confidence. That’s because the joy felt when succeeding in producing and implementing the required knowledge through digital games shall raise one’s confidence in his learning abilities. Using digital games for learning shall raise students’ satisfaction with the learning experience and process. That’s because games shall turn the learning experience into an enjoyable one (Keller, 2008). Such improves students’ conceptual understanding. Thus, it improves students’ understanding for concepts, representations and relations which may be difficult to illustrate. It improves students’ ability to compare and contrast a couple of concepts (Klopf et al., 2009).

Using digital games for learning improves learners’ reasoning and critical thinking skills. It improves learners’ spatial navigation skills. It improves memory retention (Granic et al., 2014). It allows instructors to identify the extent of progress achieved by learners. However, the digital games must be related to the course content and goals (Moylan, 2015). It encourages learners to communicate with others and offer more opportunities to use through the second language. It reduces the anxiety associated with the process of learning (Reinders, & Wattana, 2015).

Such games are used by many educators and learners because they are affordable learning medium. Using digital games for learning contributes to offering support to the productive learning process. That’s because such games allow students to come up with knowledge by themselves. Such use contributes to the developing of students’ higher order cognitive skills. That’s because playing such games requires creating and applying knowledge, and understanding, analysing, and recalling information (Clark et al., 2015)
Using digital games for learning use contributes to the developing of students’ intrapersonal, and interpersonal skills. That’s because playing such games in classroom requires interacting with the teachers and colleagues. It’s because playing such games in classroom may require carrying team works which improve one’s ability to communicate and socialise with others. Thus, such use improves one’s social and communication skills. It enables one to meet his/her learning objectives. That is because each digital educational game has a specific goal that can be met through playing it (Clark et al., 2015).

Using digital games for learning develops the academic skills of learners. It contributes to expanding their knowledge. It contributes to raising academic achievement. It contributes to developing the learners’ problem solving skills. That’s because many digital games involve problems that can be found in real life. That shall encourage students to think in a creative manner to become capable of solving their own problems. In addition, such use allows students to meet the learning goals and offer students opportunities to implement knowledge (Snow, 2016).

Using digital games for learning contributes to fostering the retention of the information acquired during the learning process. It contributes to improving the learners’ team work skills. It contribute to improving the communication skills (Bodnar et al., 2016). It contributes to improving the psychosocial development of children. It contributes to reducing the pro-social behaviour (Lobel et al., 2017).

According to Zirawaga et al. (2017), the use of digital games for learning contributes to increasing students’ engagement in the learning process. That’s because students enjoy playing during childhood. Such use improves students’ ability to recall information because digital games include multimedia elements that allow student to visualize information. That shall contributes to improving achievement in exams. Such use improves students’ computer literacy because the teacher shall probably ask students to use interactive boards by themselves. That shall improve the job opportunities of those students in the future and prepare them to join the labour market (Zirawaga et al., 2017).

The use of digital games for learning contributes to raising students’ ability to follow rules, because playing a digital game requires identifying, and understanding rules and complying with them. It contributes to catching the attention of the ones who suffer from attention disorders. That’s attributes to the use of visual and sound effects in games. Such use contributes to improving the students’ social bonds with each other. That’s because the use of digital games allows students to interact and collaborate with each other (Zirawaga et al., 2017).

Using digital games for learning turns the process of learning into a process deemed enjoyable. It improves students’ mathematical skills and ability to solve equations. It improves students’ language competency. For instance, it also contributes to expanding the students’ vocabulary. It improves critical thinking. To illustrate more, it allows learners to think in a unique and original manner about ideas. It also allows students to develop their writing skills (Turner et al., 2018).

8. Empirical Studies

Marouff (2008) investigated the effectiveness of using educational games for improving the attention of underachiever in the math course. She adopted a semi-experimental approach to conduct the experiment during the second and first semester of the year (2006/2007). The experimental group was taught through the use of educational games, whereas the control group was taught without using such games. The researcher selected a sample consisting from one hundred student who are underachievers. Those underachievers were chosen from Dakahlia in Egypt. They are third grade students. The researcher concluded that the use of educational games contributes to improving the attention of underachievers in the math course. She found that using such games improves the problem solving, cognitive and comprehension skills of underachievers. She found that such games contribute to improving the numerical competencies of underachievers.

Ibrahim et al. (2011) investigated the attitudes of the students enrolled in a Malaysian university (UTM) towards game-based learning in introductory programming course. They employed a survey. This survey involves twenty four items and applies the five point Likert scale. The researchers found that game-based learning allows students to learn and acquire knowledge by themselves effectively. Such learning allows students to learn in a manner that fit with their own learning pace. It allows students to understand the content effectively without suffering from the anxiety associated with learning. It can significantly motivate students to learn and obtain knowledge. That’s because such games offer a reward which is represented in having a positive feedback when finishing such games. It contributes to improving their learning habits. It makes the students interested in the course (Ibrahim et al., 2011).
Boeker et al. (2013) investigated the effectiveness of using games for learning by the third year university students who are majoring in medicine in Germany. Data was collected from 145 students who were majoring in medicine. The latter researchers conducted a controlled trial. They measured the learning outcomes through using a test that consists from thirty four items. They instigated the attitudes of those students through using a questionnaire. Through making an analysis, a set of results were reached. For instance, the use of games expends students’ knowledge about cognitive areas. It contributes to enhancing the respondents’ attitudes towards their learning experiences. It improves students’ motivation to learn. It is an effective mean for self-learning and improving the learning outcomes.

Li (2017) investigated the attitudes of primary school English teachers in China towards the use of employing digital games in learning. Two types of approaches were adopted. They are: the qualitative approach and the quantitative one. Through such approaches, the latter researcher used a survey to have the relevant data obtained from 76 teachers. Through such approaches, he interviewed 3 of those teachers. Based on the results, the primary school English teachers in China possess positive attitudes towards employing digital games in learning. In addition, such use motivate the students to learn much more information. It allows students to acquire vocabulary. 81.5% of teachers are willing to use digital games for teaching (Li, 2017).

According to Li (2017), employing digital games in learning contributes to promoting collaboration in learning, because there are digital games that requires having team work. It improves the language competency of students in listening and reading. That’s because some digital games require reading a paragraph and comprehend it to answer the question. It’s because some digital games require answering questions after listening to a text on speakers. The researchers found that using digital games in learning improves students’ writing skills. It’s because some games may ask students to construct sentences. Such games shall improve students’ ability to form paragraphs later on (Li, 2017).

Al-Sheikh (2017) investigated impact of using electronic educational games in the history course on the development of divergent thinking and raising motivation to achieve among primary school students in Egypt. They conducted their study during the academic year (2016/2017). 80 female and male 5th grade students were sampled and split into experimental and control groups. Data about divergent thinking was obtained through the use of a test. Data about motivation to achieve obtained through the use of a scale. The latter researcher concluded that using electronic educational games contributes to developing divergent thinking in all areas jointly and separately. Such areas include: fluency, flexibility, originality, problem solving skills, and ability to conclude results and predict. The latter researcher concluded that using electronic educational games contributes to raising students’ motivation to achieve.

Abu Jarboo’ (2018) investigated the effectiveness of using educational games in developing the 4th grade students’ mathematical thinking skills in Gaza. She used an experimental approach to conduct the investigation. 80 students were sampled. The control group involves 39 student and the experimental one involves 41 students. Pre-test and post-test were employed for measuring students’ mathematical thinking skills. It was proved that the use of educational games can significantly develop 4th grade students’ mathematical thinking skills in Gaza.

Zohud (2019) explored the perceptions of EFL Palestinian and Spanish teachers towards the use of online computer games for learning vocabulary in English language. 10 EFL Palestinian teachers and 10 EFL Spanish teachers were sampled. Data was collected from those Spanish and Palestinian teachers through distributing questionnaire forms and carrying out interviews with them. Those teachers were selected from private schools and public ones. Through analysis, the researcher reached several results. For instance, online computer games are used by those teachers because they can attract the attention of EFL students and make them interested in learning English language. They are used because they motivate the EFL students to learn more about English language, promote cooperation and develop team work skills.

Ghablan et al. (2019) investigated the impact of employing a program that’s based on playing on the development of the leadership skills of the gifted children enrolled in Kuwaiti kindergarten. They collected data through employing a quasi-experimental approach. They collected data from a sample consisting from 30 students who were split into experimental and control groups. The programs was implemented for 7 weeks. Through the analysis conducted by the latter researchers, the targeted program plays a significant role in developing leadership skills of the gifted children enrolled in Kuwaiti kindergarten. Pre-scale and post-scale were used. It plays a significant role in developing the social communication skills of those children and promoting a sense of initiation among them. It can significantly raise the self-confidence level of those students.
9. Methodology

9.1. Approach

Through adopting a descriptive analytical approach, the required measures were carried out for meeting the goals of this research. It assists researchers in providing a description for the characteristics, nature and features of phenomenon. It assists researchers in describing the events that occurred (Nassaji, 2015).

9.2. Population and Sample

The population is represented in all the Israeli primary school teachers. The researcher employed the purposive sampling method for selecting a sample. The selected sample consists from 300 female and male primary Israeli primary school teachers. Those teachers were selected from 25 primary schools. Those schools are located in the Northern District in Israel. Questionnaire forms were distributed via email to the selected teachers. 288 forms were retrieved. The response rate is 96%. Data about the sample is shown below:

Table (1): Distribution of the sampled Israeli primary school teachers in accordance with academic qualification, experience and gender

| Variable               | Category         | Frequency | Percentage% |
|------------------------|------------------|-----------|-------------|
| Gender                 | Male             | 121       | 42.01       |
|                        | Female           | 167       | 57.98       |
| Experience             | 10 years of experience or less | 134 | 46.52 |
|                        | More than 10 years of experience | 154 | 53.47 |
| Academic qualification | BA degree        | 247       | 85.76       |
|                        | MA degree        | 41        | 14.23       |
|                        | PhD degree       | 0         | 0           |

N=288

46.52% of the respondents have ten years of experience or less than that. The other respondents (53.47%) have more than 10 years of experience. 42.01% of the respondents are males. 85.76% of the respondents have a BA degree.

9.3. Instrument

The researcher reviewed several references to design the instrument (i.e. the questionnaire). The cover page of the questionnaire identifies the research title, goals and temporal and spatial limits. It offers information about the researcher and confirms that the data shall remain confidential. The first section of the questionnaire collects data about academic qualification, experience and gender of the members of the sample. The second section collects data about the Israeli primary school teachers’ attitudes towards using digital educational games in classroom. It was developed based on the information found in the references of: Marouff (2008), Ghablan (2019), Keller (2008), Li (2017), Reinders, & Wattana (2015), Moylan (2015), and Turner et al. (2018).

9.4. Validity

The initial version of the questionnaire was passed to 3 faculty members. Those faculty members work at a university located in Israel. They hold PhD degree in teaching methods. They possess much expertise in their area of speciality. The researcher requested them to make an assessment for the instrument. After assessing it, all the experts added that the questionnaire is deemed highly clear and comprehensible. They added that the instrument meets the intended goal (i.e. exploring the Israeli primary school teachers’ attitudes towards using digital educational games in classroom). One of the experts recommended deleting two statement. Another expert recommended mentioning the reference(s) used for developing the instrument. Based on the recommendations and suggestions made by experts, 2 statements were deleted and references were added to the questionnaire. The questionnaire was passed to the respondents and experts in Hebrew language. However, it was translated into English to be presented in this manuscript.

9.5. Reliability

The Cronbach alpha values is calculated. It’s 0.821. Thus, the questionnaire in this study offers the readers and the researcher results that are consistent, and reliable. That’s because this value is greater than 0.70 as it’s added by Salehi & Farhang (2019).
9.6. Data analysis

To conduct a statistical analysis, the SPSS software was employed. Furthermore, the researcher calculated standard deviations, percentages, frequencies and means. Regarding the criteria employed to have the means in this study classified, they are shown below:

| Range        | Level | Attitude |
|--------------|-------|----------|
| 2.33 or less | Low   | Negative |
| 2.34-3.66    | Moderate | Neutral |
| 3.67 or more | High  | Positive |

*Source: Al-Amery (2020)*

Regarding the five-point Likert scale, it consists of five (5) rating categories that are shown below.

| Category | Strongly agree | Agree | Neutral | Disagree | Strongly disagree |
|----------|----------------|-------|---------|----------|------------------|
| The score it represents | 5 | 4 | 3 | 2 | 1 |

10. Discussion and Results:

What are the Israeli primary school teachers’ attitudes towards using digital educational games in the classroom?

To have this question answered, standard deviations and means are calculated.

| No. | Statement                                                                 | M | Std. | Level | Attitude |
|-----|---------------------------------------------------------------------------|---|------|-------|----------|
| 1.  | Improves the problem solving skills of students                           | 4.82 | 0.14 | High  | Positive |
| 2.  | Improves the critical thinking of students                                | 4.74 | 0.26 | High  | Positve  |
| 3.  | Improves the leadership skills of students                                | 4.51 | 0.73 | High  | Positve  |
| 4.  | Raises students’ self-confidence level                                     | 4.26 | 0.85 | High  | Positve  |
| 5.  | allows instructors to identify the extent of progress achieved by learner | 2.11 | 0.38 | Low   | Negaive  |
| 6.  | Improves the teamwork skills of students                                  | 3.63 | 0.25 | Moderate | Neutrual |
| 7.  | raises students’ satisfaction with the learning experience                | 4.50 | 0.46 | High  | Positve  |
| 8.  | Allows students to acquire more vocabulary and learn more concepts        | 4.48 | 0.70 | High  | Positve  |
| 9.  | Motivates students to learn                                               | 4.72 | 0.43 | High  | Positve  |
| 10. | Raises the students’ mathematical skills                                  | 4.91 | 0.35 | High  | Positve  |
| 11. | Improves the students’ language competency                               | 4.57 | 0.19 | High  | Positve  |
| 12. | reduces the anxiety associated with the process of learning              | 4.86 | 0.77 | High  | Positve  |
| 13. | Allows students to meet the intended learning goals                       | 3.51 | 0.34 | Moderate | Neutral |
| 14. | Improves the academic achievement of students                             | 4.96 | 0.81 | High  | Positve  |
The researcher concluded that Israeli primary school teachers show positive attitudes towards using digital educational games in classroom. That is because the overall mean is 4.32. The latter result is consistent with the one found by Li (2017). Such attitudes may be attributed to the fact that children in primary schools enjoy learning through playing and engaging in virtual experiences rather than learning through the lecturing method. The researcher found that using digital games in classroom improves the problem solving skills of students, because the mean of the first statement is 4.82. The latter result is consistent with the result reached by Marouff (2008). The latter improvement is attributed to the fact that digital educational games challenge students to find the links and relationships between items.

The researcher concluded that using digital educational games improves students’ critical thinking skills, because the relevant mean is 4.74. That’s because the technological features in digital games allow students to observe and analyse the things displayed virtually. It’s because some digital games require providing an evaluation and analysis for the available options. The researcher concluded that using digital educational games in classroom improves leadership skills, because the mean of the third statement is 4.51. That’s because many digital games allow students to serve as leaders in groups and assign duties to their colleagues. The same result was found by Ghablan et al. (2019). The researcher concluded that such use

The researcher concluded that using such games in classroom raises students’ self-confidence, because the relevant mean is 4.26. That’s because digital games encourage shy students to engage in the learning process and express their views. The same result was concluded by Ghablan et al. (2019). The researcher concluded that such use raises students’ satisfaction with the learning experience, because the relevant mean is 4.50. That’s because using digital games makes the learning process attractive and enjoyable. The same result was concluded by Keller (2008).

The researcher concluded that such use allows students to acquire more vocabulary and learn more concepts, because the relevant mean is 4.48. That’s because there are many digital fill in the blanks game which can be used in classroom. It’s because there some online games include numerous vocabulary-related activities. The same result was concluded by Li (2017). The researcher concluded that such use motivates students to learn because the relevant mean is 4.72. That’s highly needed by educators in order to motivate the low achievers and the ones who suffer from learning and cognitive disabilities. Those students shall become more motivated to spend more hours at home learning to win the digital games at class.

The researcher concluded that such use improves students’ mathematical skills because the relevant mean is 4.91. That’s because there are many online games that employ real life situations to solve a mathematical problem. The same result was concluded by Turner et al. (2018).

The researcher concluded that such use improves the students’ language competency, because the relevant mean is 4.57. That’s because there are many online games that aim at improving language skills (i.e. reading, listening, writing, and speaking skills) and expanding students’ grammatical knowledge. That applies to every language in the world. The same result was concluded by Turner et al. (2018).

The researcher concluded that such use reduces the anxiety associated with the process of learning, because the relevant mean is 4.86. That’s because the integration of the learning process with playing shall make the students feel relaxed while learning and strengthen the students’ bonds with their teacher and colleagues. That shall create an anxiety-free learning environment. The same result was concluded by Reinders, & Wattana (2015).

The researcher concluded that such use improves students’ academic achievement, because the relevant mean is 4.96. That’s because such games encourage students to prepare their lessons at home to engage effectively in games at class. It’s because such games include visual and sound effects that allow students to save information in their long term memory. The same result was reached by Snow (2016).

However, using digital educational games in classroom has disadvantages. For instance, it doesn’t allow instructors to identify the extent of progress achieved by learner, because the relevant mean is 2.11. That’s because some digital games don’t allow all students to engage in playing. It’s also because some students lack

|                | Overall | 4.32 | 0.47 | High | Positive |
|----------------|---------|------|------|------|----------|
| Source         | Marouff (2008), Ghablan (2019), Keller (2008), Li (2017), Reinders, & Wattana (2015), Moylan (2015), and Turner et al. (2018). |      |      |      |          |
the required IT and literacy skills to engage effectively in such games. The latter result isn’t in agreement with the result reached by Moylan (2015).

The researcher found that such use plays a moderate role in meeting the intended learning goals, because the relevant mean is 3.51. That’s because the use of digital games isn’t effective for teaching all courses and meeting all types of learning goals. For instance, such use isn’t effective for teaching sport, music and art courses. The latter result isn’t in agreement with the result reached by Li (2017). The researcher found that such use plays a moderate role in developing students’ team work skills, because the relevant mean is 3.63. That’s because not all digital games requires carrying out team work. A different result was reached by Bodnar et al. (2016).

11. Conclusion

The researcher concluded that Israeli primary school teachers show positive attitudes towards using digital educational games in classroom. He found that such use improves students’ leadership, problem solving and critical thinking skills and raise their self-confidence levels. Such use raises students’ satisfaction with the learning process and motivates them to learn. That’s because the learning process shall become an enjoyable, exciting and attractive process.

In addition, such use improves students’ mathematical and language competency and allows students to acquire more vocabulary and learn more concepts. That’s because there are numerous digital games that target math and languages. That applies regardless of the language being taught. Such use reduces the anxiety associated with learning. That is because the integration of playing with learning shall make students feel comfortable at class and strengthen the students’ bonds with their teacher and colleagues. Such use improves students’ achievement, because playing games shall encourage students to prepare lessons at home and search about the information considered difficult to understand.

However, using digital educational games in classroom has disadvantages according to respondents. For instance, such use doesn’t allow instructors to identify the extent of progress achieved by learner. It plays a moderate role in meeting the intended learning goals. It plays a moderate role in developing students’ team work skills. That’s because not all digital games require carrying out team works.

12. Recommendations

The researcher recommends:
- Conducting studies about the IT training needs of teachers in Israel
- Providing teachers in Israel with professional development courses about modern teaching methods.
- Adding educational games to the curricula used in primary schools
- Taking the students’ age, interests, computer skills and academic levels into account when choosing digital educational games to be used at classroom.

Appendix (a): Example for a digital game

![Example for a digital game](image)

Figure (1): Example for a digital game for word searching

*Source: Zirawaga et al. (2017)*

Appendix (b): The questionnaire form

I am Fathi Shamma. I am working on a study titled (Israeli primary school teachers’ attitudes towards using digital educational games in classroom: Empirical study). Therefore, I am in need for obtaining data from you
about this topic. That shall contribute to delivering effective education to primary school students in Israel. The obtained data shall be deemed confidential. So, please, fill in this form to assist me in conducting this research.

**Part One:**
Please, circle the correct option
A) I am □ a male □ a female
B) I hold □ BA □ MA □ A higher diploma degree □ PhD degree
C) I hold □ 10 years of experience or less □ More than 10 years of experience

**Part Two:**
Please, use the following symbol: (√)

| No. | Statement                                                                 | Strongly agree | Agree | Neutral | Disagree | Strongly disagree |
|-----|---------------------------------------------------------------------------|----------------|-------|---------|----------|------------------|
|     | Using digital games in classroom                                          |                |       |         |          |                  |
| 1.  | Improves the problem solving skills of students                          |                |       |         |          |                  |
| 2.  | Improves the critical thinking of students                               |                |       |         |          |                  |
| 3.  | Improves the leadership skills of students                               |                |       |         |          |                  |
| 4.  | Raises students’ self-confidence level                                   |                |       |         |          |                  |
| 5.  | allows instructors to identify the extent of progress achieved by learner|                |       |         |          |                  |
| 6.  | Improves the team work skills of students                                |                |       |         |          |                  |
| 7.  | raises students’ satisfaction with the learning experience                |                |       |         |          |                  |
| 8.  | Allows students to acquire more vocabulary and learn more concepts       |                |       |         |          |                  |
| 9.  | Motivates students to learn                                               |                |       |         |          |                  |
| 10. | Raises the students’ mathematical skills                                 |                |       |         |          |                  |
| 11. | Improves the students’ language competency                               |                |       |         |          |                  |
| 12. | reduces the anxiety associated with the process of learning              |                |       |         |          |                  |
| 13. | Allows students to meet the intended learning goals                      |                |       |         |          |                  |
| 14. | Improves the academic achievement of students                            |                |       |         |          |                  |

*Sources: Marouff (2008), Ghablan (2019), Keller (2008), Li (2017), Reinders, & Wattana (2015), Moylan (2015), and Turner et al. (2018).*

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