

An Evaluation of Positive and Negative Aspects of Educational Games: A Case Study in Erbil Brayaty Primary School

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Abstract: In the educational processes, games are generally handled with their positive aspects. Particular attention has been given to games in the literature, especially because of their motivating and instructive aspects to students. However, in this study, attention was drawn to some negative aspects of games along with their positive aspects. The positive and negative aspects of the games were discussed together with 2 games applied to primary school 5th grade students. The instructive aspect of the games has been revealed by the tests and evaluations. On the other hand, its negative aspects were determined by the observations made in the game and the thoughts of the teacher.

Keywords: Educational Games, Positive Aspects, Negative Aspects

1. Introduction

Games played by people at all ages have very important functions especially for children. It is known that playing different games during the developmental stages of children accelerates psychological development and sociological adaptation. In terms of these aspects of games, we see that they are used a lot in educational processes. The motivating aspects of games in education attract the attention of educators. For this reason, it is aimed that the students learn in the best way by including educational games in the processes. However, these games, on which the relevant literature generally focuses on the positive aspects, also have some negative aspects if they are not applied correctly.

2. Review of Literature

2.1 Game

Even though the concept of game is seen as an insignificant activity in daily language, there is really a lot of educational content, especially for children. When we look beyond the social content and look at the technical details, it is possible to define the game as an entertainment that develops the skills and intelligence of people, has certain rules and has a good time (Rosyati et al., 2020).

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Although the concept of play does not have any age restrictions, activities for children are known as games. The fact that games have some aspects like ensuring motivation has caused them to be an effective tool in educational processes (Ge & Ifenthaler, 2018). Games, which are a very effective tool especially for children to gain experience, also teach children to share with their friends and compete with them. In addition, having an entertaining aspect makes the game attractive. Although the concept of game is regarded as an educational activity in educational processes, it should be taken into account that its primary aspect is entertainment (Iten & Petko, 2016).

Attempts to define the concept of game may exclude some important aspects of it. It should be noted that different definitions focus on different points. For example, according to another definition of game, it is necessary to deal primarily with the two opposing sides, which are the basic components of the game. Afterwards, it is explained that these competitors have to act within certain rules by restricting themselves with these rules. As a result, the main goal is to reach the target determined within these rules before the opponent or to win the game (Loy, 1968).

One of the most important aspects of the game for children is that it contributes to their personal development and is a socialization tool. In addition, games have particular aspects that help children gain responsibility. Although the game as a social content is defined only as a game and is not considered worthy of definition at some points, it should be stated that it is a very serious effort for children (Von Wangenheim & Shull, 2009).

Since this study considers the game as an activity for children in educational processes, the definitions in its content are also handled in the same parallel. However, on the other hand, it should be kept in mind that the game is not just an activity for children. These activities are quite common among animals and adult people.

2.2 Properties of Games

It is very difficult to make a definition of the game with all its contents because the concept of the game can come with different contents in different environments. Instead, showing some of the game's features might be a more comprehensive explanation.

- Where the concept of the game is dealt with, a concrete product does not emerge, but there is an actively functioning process.
- Games are motivating by nature.
- No external pressure is applied to the gamer to realize his goals. Likewise, sometimes it is not done at the point of fully applying the rules and fulfilling the duties of the player (Sweetser & Wyeth, 2005). In this respect, the performance of the player is determined according to his own motivation and the endurance of his body. Therefore, all control is on the player.
- In some games, players create a simulation and continue to act in this imaginary world as if it were real (Devisch, 2008).
- In the game, players can use their own imagination and reveal their own creativity.
- Some games allow the player to use his own imagination. Thus, the agent himself acts more authentically and uses his creative features.

- Although social interaction is very important in many games, players act around their own personal feelings and thoughts and interact with others accordingly. An agent in this situation not only has the opportunity to reflect what he knows and his abilities, but also becomes aware of his own limitations (Kelley & Stahelski, 1970).
- In the game, the player not only has the ability to manipulate, but also discovers new things and turns them into practice by using their abilities in the best way.
- It helps people to test their own abilities and limits, as the motivating aspect of the game leads people to use their abilities to the highest level.
- Although the rules of the game limit many movements, the player's abilities and skills are the main factor in the direction of the game (Oslin et al., 1998).
- The game can be played by yourself as well as with other people.
- The most important socializing aspect of the game is that while acting in the group, it teaches to synchronize with other group members who have the same goal and to fight for the same goal.
- The game is the effective use of our abilities that we have accumulated in our life. In this context, the game is a test of our developed capabilities (Gauntlett, 2011).
- The process is as important as the outcome in the game. In addition to the result that is the main goal, it is important how the process will be operated.
- The game is often quite a complex process and occurs when many elements are activated at the same time. While the predetermined rules make the game complex by nature, determining the performance according to the strategy to be applied by the players and the situation of the opponent increases this complexity. In addition, the psychological states, motivations, and external pressures of the players make the game even more complex. In addition, changing tactics according to the course of the game is another factor that causes complexity (Montserrat et al., 2011).
- The elements that appear in the game do not operate within a certain logic. It is psychological processes rather than logic that dominate the processes.
- The game rules are not indispensable; it is possible to change these rules according to the place (Ellis, 2011).
- Reality and imaginary situations can coexist in the game.
- One of the most important elements of the game is that the result is unknown to anyone. This is an important point that motivates the players.
- The environment in which the game is played has many determining factors about the game.
- In some cases, it is seen that the game emerges as a spontaneous activity.
- An important aspect of the game is the development of social relations.
- The game should not be seen as a mere entertainment element. Game is also a necessity.
- The game requires both physical and mental participation (Wankel & Berger, 1990).

In addition, purpose and function emerge as indispensable elements in the game. These two concepts are so important that it is almost impossible to imagine a game without them. According to Vygotsky (1967), it is not possible to think of a game as aimless. This aim, which is already included in the games, motivates the players and directs them to act in a team spirit. If both parties have the same motivation, an exciting competition emerges where the outcome is uncertain. The most useful aspect of the game in educational processes is that it provides this motivation (Vygotsky, 1967).

One of the important parts of the game is the limitation of the means to be used. It is not possible to use unlimited possibilities in the game at the point of reaching the goal. For example, in a competition, runners are expected to run without any outside help. At this point, any equipment to assist the competitor in running is prohibited (Girard, 2013).

2.3 Stages of Playing Game in Children

Although game emerges as a natural behavior model in humans and animals, it is seen as an activity especially aimed at children within its general definition. The game for children cannot be treated as a simple pastime. Play is irreplaceable in the personal development of children. The nature of the game's changes according to the age characteristics of the children. Age, social and emotional development of children transforms them into different stages in their developmental processes. As a result, the games played by children also change. According to Piaget, children's playing games and using game materials are divided into 3 different stages. The 0-2 age period in children emerges as the sensorimotor period. The period between the ages of 2-7 is the pre-operational period and symbolic games emerge in this period when imaginary games emerge, and children take on different characters in these games. The period between the ages of 7-11 is called the concrete operational period. During this period, games with rules emerge in children. The most important aspect of the games in this period is the preparation for real life and their being an important tool for learning. Thanks to these games, the functions mentioned above are realized, as well as the physical development of children is achieved. In addition, a sense of independence develops in children (Piaget, 1976).

It is possible to come across other studies in which games are categorized differently. For example, Smilansky mentioned 4 general categories related to games.

1. **Functional Play:** In this stage, children engage in physical activity with simple muscle movements and strengthen their muscles. These games, which emerge as repeating their own movements and imitating themselves, force the child to find new actions and repeat them. He also works on the pronunciation of words. By playing with his toys, he both gains new experiences and gets to know his surroundings. In this way, children also discover their own physical competencies.
2. **Constructive Play:** In this period, children tend towards creative activities and enjoy their new discoveries. They learn to use the toy they manipulate in different ways and direct it from functional activity to creative activity. Thus, they concentrate better on the game and play for a longer time. At the same time, children set some goals at this stage and make an effort to reach these goals. It is possible to say that the transition from the previous stage to this stage is the transition from the form to the formation. For example, while the children were busy with sporadic handling of sand in the previous stage, they try to build something out of this sand at this stage.
3. **Dramatic Play:** At this stage, the development of children reaches a symbolic point, and the dramatic play method emerges. In this period, children reveal their physical strength and creative characteristics in different ways and reveal their social awareness. In fact, at this point, it can be said that children play the adulthood game and prepare for the next stage. In this period, children can create an imaginary situation by manipulating the real world in front of them as they perceive it, and they determine roles for themselves in their imaginary world. Thus, they can satisfy their own wants

and desires. Thanks to this stage, children are in the environment they live in as agents, observers and participants (Celik, 2019).

4. Games with rules: This period is the highest of the game development stages and at this point, children accept the predetermined rules, adjust themselves according to these rules and play the game. At this point, children learn to control their own behavior, movements, and reactions. Thus, children gain the characteristic features required to be an adult (Takhvar & Smith, 1990).

2.4 Games and Education

The game has very important contributions to the educational processes. Particularly, students' willingness and careful focus on games increase their motivation and improve their learning capacity. Games, which offer an effective simulation of learning by experience, not only play a role in increasing the excitement of children. Additionally, they have important instructive aspects (Gee, 2008). While the lives of students outside of school are generally shaped around games, games also have an important place in education processes. While games motivate students, they have an accelerating effect on their learning processes at the same time. The absence of games in the course content of children, especially in primary and secondary school, negatively affects their learning capacities and motivations (Hainey et al., 2016). It is possible to say that learning will slow down where the game is ignored and only the course content is highlighted. In addition, the duties of schools to present academic information in traditional understandings have changed with modern understandings. Thus, the school has entered into a transformation in a way that will affect the students' life in every aspect and undertake a function that will teach them life (Edwards & Mercer, 2013). At this point, it is inevitable that the games that will accelerate the mental and psychological development of children should be inserted in education process, because in this way, children learn the social life and gain a character suitable for it (Bramsfeld & Good, 2016).

It is possible to express the positive contributions of games to educational processes as follows:

- If the games played during the education process are adapted to the process correctly, they improve the sense of responsibility in children. In addition, children learn to recognize the rules in this way.
- Starting activities with games motivates children. It relieves the boredom that may occur in children (Swann & Pittman, 1977).
- Games positively affect the imagination of children.
- In the modern world where learning by doing is an integral part of education, the function of the game is inevitable.
- Games are very effective in the development of children's physical strength (Abdullaev, 2021).
- For children who are overly stressed and nervous, activities such as games increase the concentration of the lesson (Purba et al., 2019).

However, it should be taken into account that the games in the education curricula may also cause some negativities. For example, because the games take a lot of time, if they are applied too much, the normal curriculum may not catch up. In addition, the fact that students want to spend the lessons in a game format constantly can be reflected in the education process as a negative. In addition, games whose content and process are not set correctly may not reveal the acquisitions required by the curriculum (Turgut & İrgin, 2009).

In cases where the games are not adjusted correctly according to the age and other characteristics of the students, very different results than expected may occur (Plass et al., 2019). The high ambition to win in some children may cause the content of the game to deteriorate and move away from the expected effect. In addition, this situation can lead to ongoing conflicts between students later on (Nicholson & Waal-Andrews, 2005). If students who have not developed a sense of self-confidence lose the game they are playing, these feelings may weaken even more. In addition, because the games played require a high effort, students may be very tired in the next lesson (Perry-Burney & Takyi, 2002).

2.5 Games and Motivation

We can define motivation as an inner emotion that directs goal-directed behavior. It is an indicator of motivation when a person is willing to do his job and to focus his attention on that job (Cook & Artino Jr, 2016). It should be stated that learning as a result of motivated behaviors, especially in educational processes, is much faster. One of the important aspects of motivation is that the person doing the work is willing and enjoying the work he is doing. In addition, when the person reaches the goal, his motivation tends to increase even more. However, it should be noted that the opposite is also true. In that case, when you cannot reach your goals in spite of struggle, your motivation decreases. People with high motivation will try to apply different strategies to achieve their goals (Celik, 2019; Guthrie & Davis, 2003).

Within this defined framework, it should be stated that motivation is an indispensable content of educational processes. It has been the subject of many studies that students will learn much faster if they are highly motivated (Burke, 1995; Mart, 2011). In this case, choosing activities that will increase the motivation of the students and directing the students to the learning goal in a motivated way are the inevitable requirements of the education processes.

Highly motivated people have some behavioral characteristics. For example, the work of these people is goal-oriented, and they spend a lot of effort for this purpose. In addition, these people continue to act until they achieve the result. In addition, they show a very careful behavior in the work they do. These people have expectations and desires for the result. They act with a positive emotion that will cause all these behavior patterns. Thus, this emotion is activated. In addition, these people have expectations about the result. Self-confidence and self-efficacy levels of motivated people are quite high (Gardner & Smythe, 1975; Mart, 2022).

3. Methodology

3.1 Research Model

Qualitative and quantitative methods were used in this research. In the process, the games that were previously included in the educational content were used. During the playing of these games, what kind of contribution they made to the learning of the students was recorded by the observation method. After the game, a test was applied to the students who played the game about the subject. In addition, the same test was applied to the other class for comparison. However, the other class did not play this game, they only saw the subject in the lesson. Ten well-achieved students were chosen for the test by their teachers from each group. The grades of the experimental group that played the game and the control group that

did not play the game were compared. In addition, the negative behaviors of the students during the game were reported.

3.2 Sampling

In this study, 5th grade students of Brayaty Primary School working within Ronaki Hawler Educational Institutions were used. Although the games were applied to the whole class, the test was applied only to 10 people selected by the teacher. The reason for this is the fear that the students will not show the necessary care because the test will be conducted for research purposes.

3.3 Data Collection

In this study, the data were obtained primarily by the observation method. The negative behaviors of the students were noted, and their learning behaviors were measured with the test method. We also resorted to the teacher's opinions about the games where we could not observe.

3.4 Data Collection Tools

The data of this study were collected by observation method. In addition, the tests were used in measurement and evaluation. Since it is impossible to observe everything in one survey, we also resorted to the teacher's opinions and experiences.

4. Findings

Students were observed through two games in their English classes. As a result of these, students were tested, and the results were evaluated.

4.1 Jigsaw Game

This game can be adjusted to suit the content of many lessons. We applied this game as a vocabulary study in English class. This game was applied in the unit where the parts of the house and the furniture were introduced to the students. In the puzzle game, the students unscrambled the different pieces together correctly and noted which part of the house or which item the resulting picture was. The pictures used for the puzzle were taken from the internet and laminated for long-term use.

Working in pairs, the students put the puzzle on each table together to find out what the thing is and noted it on the corresponding number. Then they scrambled the puzzle they had put together and moved on to the next table. Thus, they completed the game by putting together the puzzles on all the tables.

After the game, we applied a ten-question vocabulary test to the students and noted down the results.

Table 1: Vocabulary test results of experiment group

Student 1	10
Student 2	10
Student 3	10
Student 4	9
Student 5	9
Student 6	9
Student 7	9
Student 8	9
Student 9	8
Student 10	8
Average	9.1

Table 2: Vocabulary test results of control group

Student 1	10
Student 2	9
Student 3	9
Student 4	8
Student 5	8
Student 6	8
Student 7	7
Student 8	7
Student 9	7
Student 10	7
Average	8

When we look at the results, we see that the experimental group achieved an average of 9.1, while the control group remained at an average of 8. Therefore, we can say that the experimental group achieved better results than the control group.

Table 3: Comparison of the two groups in ANOVA test

ANOVA						
VAR00002						
	Sum	of	df	Mean Square	F	Sig.
	Squares					
Between Groups	3.900		3	1.300	7.800	.017
Within Groups	1.000		6	.167		
Total	4.900		9			

When we look at the results, $p=.017$ is obtained. Since this result was less than 0.05, there was a significant difference between the two groups. As can be seen here, the experimental group that played games achieved better results than the control group that did not play.

4.2 Positive Aspects of the Game

The fact that students complete a difficult task with their own efforts has shown a motivation-increasing effect for them. In addition, the fact that it is in a game format and has competition within itself has had a motivation-increasing effect.

Students' ability to synthesize is enhanced by such games. They also made progress by establishing the part-whole relationship. In this game, the students developed some strategies together with the puzzle. For example, they first evaluated the harmony of the small picture they were looking at with the big picture, and then they were placed according to the recesses and protrusions of the puzzle.

In the activity in the book, the students repeat the words just by listening and looking at the pictures. In this game, the motivation of the students was much higher, as there was bringing together and making effort. As a result, this emerges when we compare it with the group in which students learn better.

4.3 Negative Aspects of the Game

First of all, the preparation of the game is quite time consuming for the teacher. The teacher first turns the picture into a puzzle and then laminates it to make it durable. It is also important that the parts do not get lost and mixed with each other. It is very difficult to achieve this in these age groups.

One of the negativities we observed in this study is that students who do the puzzle quickly put pressure on others and make fun of those who are late. The teacher should take into account that the game, which is an important motivation tool, will cause negativities in such cases. In addition, since the students continued to do it in the same order, the constant mocking of one group with the other reduced the motivation of the children.

Although games are fun and educational, they are activities that take a lot of time. It should be stated that the curriculum will not be completed if the students constantly ask for games. In addition, the experiences shared by their teachers with us have shown that in some cases, games involve some complications. For example, when the request of the student who wanted to play a game is rejected by the teacher, it was stated by the teacher that the student gets offended and his motivation for the lesson decreases.

After the activity, it is very difficult to start a new lesson. As a result of their concentration on the game they play in the lesson, the students have problems in focusing on the other lesson. It takes time for children to get out of the play atmosphere and this affects the next lesson. Again, as expressed by their teachers, it is noteworthy that weak students want to play games more than ordinary lessons.

In addition to all these, it was stated by the teachers that the interest of the students in the games decreased over time if the games were continuous. Thus, students do not show the required performance in the next activity.

4.4 Running Dictation

This game can be designed to be used in different lessons. We used this game again in English class and to reinforce the Present Continuous Tense. This game was played with 5 groups, with 3 students in each group. One of the students shared their roles as runner, one as dictator and one as writer. This game was not played in a classroom setting as it required students to run to the written sentence and come back and say it another person. In this way, it was played in the dining hall, which provided a large area. The runner student comes back by reading the Present Continuous sentences affixed to different corners of the dining hall and whispers to the dictator student. This student, on the other hand, has the writer write the sentence by repeating it. Only the dictator corrects the mistakes of the writer student.

The sentences used in this game are:

" I am swimming in the pool."

" They are competing in a race."

" We are lying on the sofa."

" He is playing at computer game."

" She is tidying her room."

" The dog is barking at people."

" You are doing the housework."

" The students are studying in the library."

" My dad is riding a horse."

" They are having a good time."

It is aimed to practice -ing forms of the verbs and the correct use of the auxiliary verb “to be” in the game. The writer student wrote them on a piece of paper that the teacher already provided. In the end, the results of the groups were calculated. The number of correct sentences determined their points.

Table 4: The number of correct sentences in each group

Group 1	8
Group 2	8
Group 3	7
Group 4	9
Group 5	6

According to the results, the winner group was determined.

4.5 Positive Aspects of the Game

Since the students were in a race, they acted with a very high motivation. In addition, they made a great effort to convey the correct sentence so that the sentences were more memorable. Afterwards, they corrected their mistakes by looking at the correct sentences.

Since it was a very active environment, the motivation of the students was at a high level. The mistakes they made were instructive for them. Afterwards, the correct spellings were memorable. It has been observed that some students show performances that they cannot show in normal lessons. Their teacher shared this information with us. They made an effort to develop strategies in order to conclude the competition faster in the game.

Although the lesson motivation of the students in this age group is short-term, they have maintained their long-term motivation here. We can say that this game activates the cognitive, emotional and kinetic aspects of the students. The instructive and reinforcing aspects of such games are quite powerful.

4.6 Negative Aspects of the Game

The fact that some students were slower than others caused them to receive serious criticism from their friends. Thus, resentment broke out among some students. The winning students showed their superiority over the others, and this caused the feeling of jealousy in the others. The students, who were constantly in the feeling of winning, were disappointed when they lost in this competition.

On the other hand, the fact that students with high average success showed themselves here also put pressure on others. In this case, it was thought that the students should be distributed in a balanced way by their teachers. Runners were very tired in the game. In addition, a student tripped while running in the excitement of the competition and had a small accident.

5. Discussion

Games are highly educational tools for students. They give very effective results especially for young children due to their attractive and motivating features. The socialization and cooperation that students of this age need are reinforced by games. In addition to this, students not only need to develop some strategies, but also develop their analysis and synthesis skills. Learning takes place faster for students who act with high motivation. Even students who are weak in normal lessons can move comfortably in racing environments such as games. For students who are tired of constantly doing classroom lessons, activities such as games appear as a motivating innovation. In addition, there are other positive aspects of the games that we could not identify here.

However, there are some negative aspects of the games that should be noted. As we have recorded in the literature, the positive aspects of the games have been drawn attention and how they can be used in educational processes has been expressed very commonly. However, an important point that this study tries to focus on is that it should be known that some negativities may occur in the educational games played by primary and secondary school children. The emotional states of the students and their rivalries with each other are also reflected in the games, and some negative consequences arise from time to time.

Particularly, the constant winning of successful students has caused them to tend to show this as an advantage over others. In addition, some jealousies and resentment have emerged.

It should be underlined that in games where students' motivation and sense of winning are high, they cause some accidents.

6. Conclusion

Teachers need to be very meticulous in the implementation of games that have an educational aspect. First of all, the teacher should discover the competition between the students beforehand. Considering the jealousy and competition they feel towards each other, the teacher should divide them into groups in a way to eliminate the negativities within the games. If the teachers, who generally focus on the positive aspects of the games, act by taking into account some of the negative aspects, it will make the games more effective in the educational processes. The duty of the teacher is to design the games in accordance with the educational content, as well as to take the steps to minimize the possible negativities by predicting in advance.

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Appendix- The test we applied after jigsaw game

Write down the thing in the picture under it.



1. (Bedroom)



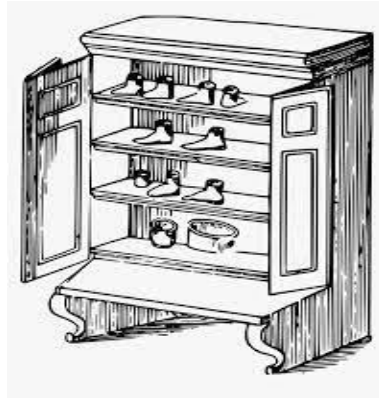
2. (Dining Room)



3. (Living Room)



4. (Bathroom)



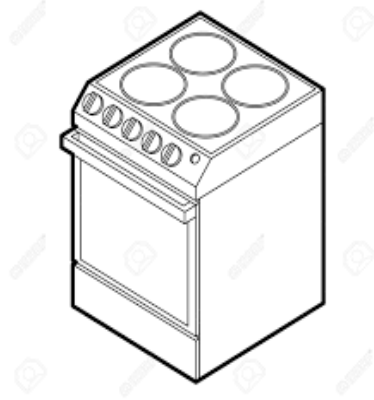
5. (Cupboard)



6. (Couch)



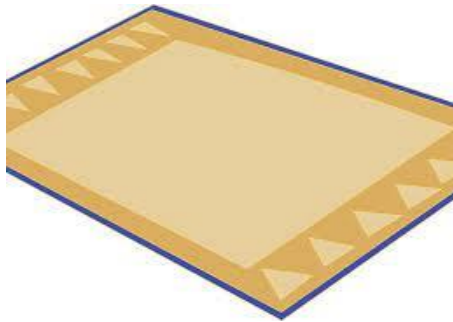
7. (Fireplace)



8. (Cooker)



9. (Fridge)



10. (Carpet)