

Full Length Research Paper

Researching the relationship between the influence of games on elementary school students, their gender and lesson success variables and their game preferences

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This research is a descriptive research with scanning method. It aims to define the relationship between the gender and academic success of secondary school students and their play preferences. The population of the research is composed of the secondary schools of Burdur city centrum and the sample group is composed of the students who are studying at the secondary schools. The data of the research were obtained from the literary sources and through questionnaire. A questionnaire was developed according to the aim of the research. After the comprehensibility and content validity of the questionnaire were tested, it was applied to the sample group, 318 male, 287 female and totally 605 students with random sampling method. The obtained data were coded on computer environment via appropriate statistic programs. As statistical operations, frequency (f) and percentage (%), Crosstable (crosstab), X² (X-square) were applied. The collected data showed that there is a significant difference in 0.05 significance level between the gender and academic success of students and their play preferences. According to this data we can say that male students play football more than female students do; however, female students generally do not have sportive activities but they play touch. The students who are academically successful play mostly the mental computer games and football; other students do sportive activities and fighting. In conclusion, we can say that there are statistically significant differences between the gender and academic success of students and their play preferences ($P < 0.05$).

Key words: Secondary school, student, academics success, play preference.

INTRODUCTION

As it is commonly known, one of the most distinctive features of children is that they are highly active. By playing with their peers thanks to their active life, children are able to develop physically, intellectually and psycho-socially.

Though seen as a trivial, time killing activity, a game is, nevertheless, the most important opportunity in which a child can best express himself, his/her feelings and improve his/her skills. Concisely, the game is the most natural and active learning way for a child (Mangir and Aktaş, 1993).

Games are like laboratories for children. They know each other, even themselves, by means of games and improve their new abilities by discovering them through games. Games are important things to which children give much value and they see it as a very important

thing.

Not only does a game provide a suitable environment in which a child can express himself but it is also a means of physical, intellectual and emotional improvement for children (Avcı, 2005). Children learn socializing, having relationship with others, the sense of affection and sharing by means of games. Children, who are coming together, begin to play with each other even without learning their names first; game is their common language (Kale, 1997).

Game is an activity which enables any child to improve from every aspect and create his own personality. Game is already known to be a means of common communication among children. Game, on the one hand, develops physical and intellectual state of children; on the other hand, it is a crucial activity for

Table 1. Gender distribution of the participants.

Variable	Distribution (No.)	Distribution (%)
Male	318	52.6
Female	287	47.4
Total	605	100.0

children to interact with the world of objects, a means of gaining personality and later on, it helps any child be a social individual in the whole society (Gürün, 1984).

According to many researchers, game, itself, is a fundamental compound for children for a healthy social, physical and intellectual development. It is a physical process by which children learn by experiencing and complying with the physical surrounding. The quality level of time and energy exhausted for a game by a child is important. It has been observed that a child who has the opportunity of a qualified game has flexible approach on problem solving and better social relationships and is physically healthier (Jaspert et al., 1988; Heseltine and Holborn, 1987; Hart, 1993).

Games, occupying an important place in the development of the individuals, are classified in various ways. This classification is composed of four groups as:

(i) "No-rule games" (Cohen, 1994): Helping muscle building such as climbing, jumping, running and physical-motoric games. Such games have certain rules as in basketball and football; intellectual-knowledge requiring games including activities which use the environment and objects; and social ones including such games as role-playing and dramatic games, organized games, speaking, walking and observation (Hart, 1993). (ii) "Operational game" by which a skill compound is tested and muscles are exercised. (iii) "Dramatic game" either directed or naturally displayed. (iv) "Rule game" which is prearranged or which depend on some certain rules in intellectual game classifications.

Particularly, the increasing urbanization stemming from industrialization and the immigration which is the direct result of this have caused irregular or unplanned constructions. As a result, the playing ground for children has been greatly restricted.

Living in apartment buildings, going to school by vehicles, spending time in front of TVs or computers, a child is now longing for child-game-zones and parks due to unplanned urbanization. Thus, off-lesson sportive activities, games and physical education lessons by which children can exhaust energy and satisfy activity demands have increasingly gained importance.

Most of the students today grow up in a rather different environment than it was before. They are born in an era in which the technology and especially the computers are extensively used. They have not experienced the time when the music was not digital and there was no television at all. The most important of all is that, today's students never know what kind of a

world there could be without television, internet and computer games (Prensky, 2001).

They have always used technological devices all through their lives and this has deeply influenced their world-views, life styles and expectations.

New digital technologies and intellectual changes resulting from media have also caused changes in the needs and preferences of the young. Especially education preferences and needs of the young generation have changed (Tapscott, 1997). According to a research, today's youth are rather different from their parents for such aspects as learning, playing, interacting, working and creating societies. This change is a big change that has never been witnessed in history. That is why; this causes differences in the play grounds and preferences of today's children.

The research aims to present whether there is a relationship between the game preferences of children and game itself, which is so important on children's development, and its influence on today's children and their genders.

MATERIALS AND METHODS

The research intended to present the relationship between the effect of game on elementary school students and their gender and lesson success variables and game preferences.

The research populations is composed of elementary schools in Burdur city center, while the sample group, includes 6th, 7th, 8th grade students chosen from 6 elementary schools according to socioeconomic and development level.

Data of the research were collected by means of literature scanning and questionnaire. It was applied to the sample group in the research area through random sampling method after their intelligence, content validity and reliability had been proved. A total of 605 students, 318 of whom are boys and 287 of whom are girls, participated in the research. Some of the participators did not give any answers. Therefore, the number of the participators seems less.

Collected data were coded on computer environment in suitable statistic program for statistical operations. As statistical operations, frequency (f), and percentage (%), cross table (Croostab), X^2 (X-Square) were applied. To determine percentage distribution and test the differences between genders for each questionnaire, comment were made taking 0.05 as confidence interval.

FINDINGS

As can be seen in Table 1, a total of 605 participants, 318 of whom are boys and 287 girls, participated in the research.

In Table 2, an inquiry was done on sportive game play status of participants. When the total answers to this question were examined, it was seen that 78.5%

Table 2. Sportive game playing percentages of participants.

Variable	Yes	No	Total
Male	290 (91.8%)	26(8.2%)	316 (100.0%)
Female	166 (62.6%)	99(37.4%)	265(100.0%)
Total	456(78.5%)	125 (21.5%)	581(100.0%)

$\chi^2= 72.433$, $P= 0.000$, $P<0.05$.

Table 3. Percentage of playing other games.

Variable	Rope skipping	Touch	Word games	Ball games	Other	Total
Male	34 (17.4%)	17(8.7%)	36 (18.5%)	16 (8.2%)	92 (47.2%)	195(100.0%)
Female	100 (48.8%)	6 (2.9%)	23 (11.2%)	38 (18.5%)	38 (18.5%)	205 (100.0%)
Total	134 (33.5%)	23 (5.8%)	59(14.8%)	54 (13.5%)	130 (32.5%)	400 (100.0%)

$\chi^2= 71.821$, $P= 0.000$, $P<0.05$.

Table 4. Types of computer games which participants play.

Variable	Mind games	Action and fighting games	Sportive games	Total
Male	144 (49.3%)	57 (19.5%)	91 (31.2%)	292(100.0%)
Female	160 (72.1%)	6 (2.7%)	56 (25.2%)	222(100.0%)
Total	304 (59.1%)	63 (12.3%)	147 (28.6%)	514 (100.0%)

$\chi^2= 41.702$, $P= 0.000$, $P<0.05$.

Table 5. Where do they usually play computer games.

Variable	Home	Internet café	School computer Lab	Total
Male	223 (71.0%)	54 (17.2%)	37(11.8%)	314 (100.0%)
Female	209 (80.1%)	18 (6.9%)	34 (13.0%)	261 (100.0%)
Total	432 (75.1%)	72 (12.5%)	71(12.3%)	575 (100.0%)

$\chi^2= 13.813$, $P= 0.001$, $P<0.05$.

of them said “yes”, while 21.5% of them said “no”. On the other hand, when we look at the answers according to gender variable, χ^2 analysis value of the answers was found to be 72.433. This value is statistically significant in 0.05 significance level.

In Table 3, the percentages of participants, showing which games they play, was inquired. If we look at the total answers given to this question, we see that 33.5% of the participants said “rope skipping”, 32.5% of them said ‘other games’, 14.8% said “word games”, 13.5% of them said “ball games” and 5.8% of the participants said that they were playing “touch”. When we look at the answers given according to gender variable, comparative χ^2 analysis value of the answers was found to be 71.281.

This value is also statistically significant in 0.05 significance level ($P<0.05$).

Computer games percentages of the participants were inquired on Table 4. When we examine the total answers given to this question, we see that 59.1% of

the participants said “mind games”, 28.6% of them said “sportive games”, 12.3% said “action and fighting games”. However, when we look at the answers according to gender variable, comparative χ^2 analysis value of the answers was found to be 41.702. This value is also statistically significant in 0.05 significance level ($P<0.05$).

The place where participants usually play computer games was inquired in Table 5. We see that 75.1% of them said they play computer games “at home”, 12.5% of them play at an “internet café”, and 12.3% of the participants said they play computer games at school computer labs. Nevertheless, when we look at the answers according to gender variable, comparative χ^2 analysis value of the answers was found to be 13.813.

This value is also statistically significant in 0.05 significance level ($P<0.05$).

In Table 6, an inquiry was done on the status of participants showing how often they play computer games. We see that 52.8% of them said they play

Table 6. How often do the participants play computer games.

Variable	1 to 2 h a day	1 to 2 h in two days	1 to 2 h in a week	Total
Male	129 (40.8%)	46 (14.6%)	141(44.6%)	316 (100.0%)
Female	62 (23.2%)	38 (14.2%)	167(62.5%)	267 (100.0%)
Total	191 (32.8%)	84 (14.4%)	308 (52.8%)	583 (100.0%)

$\chi^2= 22.500, P= 0.000, P<0.05.$

Table 7. How do the games affect their lesson success.

Variable	Enhance my success	Negatively affects my lesson success	It has no effect	Total
Male	49 (15.5%)	63 (19.9%)	204 (64.6%)	316 (100.0%)
Female	28 (10.0%)	42 (14.9%)	211(75.1%)	281 (100.0%)
Total	77 (12.9%)	105 (17.6%)	415 (69.5%)	597 (100.0%)

$\chi^2= 8.021, P= 0.018, P<0.05.$

Table 8. How do the games affect the participants.

Variable	It develops my skills	I better know my friend through game	I exhaust my energy and relax	Total
Male	208 (65.4%)	18 (5.7%)	92(28.9%)	318 (100.0%)
Female	168 (59.8%)	22 (7.8%)	91 (32.4%)	281 (100.0%)
Total	376 (62.8%)	40(6.7%)	183 (30.6%)	599(100.0%)

$\chi^2= 2.384, P= 0.304, P>0.05.$

computer games “1 to 2 h in a week”, 32.8% of them play “1 to 2 h in a day”, and 14.4% of the participants said they play computer games 1 to 2 h in two days. However, when we look at the answers according to gender variable, comparative χ^2 analysis value of the answers was found to be 22.500. This value is also statistically significant in 0.05 significance level ($P<0.05$).

The status of the participators showing their views on how games affect their lesson success was inquired in Table 7. If we closely examine the given answers, we see that 69.5% of them said “it has no effect”, 12.9% said “it affects the lesson success negatively, and 17.6% of the participants replied that it enhances his/her lesson success. However, when we look at the answers according to gender variable, comparative χ^2 analysis value of the answers was found to be 8.021. This value is also statistically significant in 0.05 significance level ($P<0.05$).

In Table 8, the question “how do the games affect the participants?” was addressed to the participants. When we examine the given answers, we see that 62.8% of them said “it develops my skills”, 30.6% said “I exhaust my energy and relax”, and 6.7% of the participants replied that “I know my friend better through game”. However, when we look at the answers according to gender variable, comparative χ^2 analysis value of the answers was found to be 2.384. This value is not statistically significant in 0.05 significance level ($P>0.05$).

In Table 5, lesson success and sportive game playing status of the participants was inquired. If we closely examine the given answers, we see that 78.5% of them said “I play sportive game”, 21.5% said “I do not play sportive game”. However, in the comparative statistical evaluation of the answers according to gender variable, comparative χ^2 analysis value of the answers was found to be 27.432. This value is also statistically significant in 0.05 significance level ($P<0.05$).

Lesson success and other game playing status of the participators were inquired on Table 5. If we closely examine the given answers, we see that 32.8% of them said “rope skipping”, 32.8% said “other”, 14.9% said “word games”, and 13.6% said “ball game” and 5.8% of the participants replied that they play “touch”. However, when we look at the answers according to gender variable, comparative χ^2 analysis value of the answers was found to be 24.008. This value is also statistically significant in 0.05 significance level ($P<0.05$).

Lesson success and internet game preferences of the participators were studied in Table 11. If we closely examine the given answers, we see that 38.1% of them said “mind games”, 28.7% said “sportive games, 20.8% of them said “strategy games”, and 12.5% of the participants replied that they play “action and fighting games”. However, when we look at the answers according to gender variable, comparative χ^2 analysis value of the answers was found to be 31.251. This value is also statistically significant in 0.05 significance level ($P<0.05$).

DISCUSSION AND CONCLUSION

A total of 605 students, 318 of whom are male and 287 females, participated in the research aiming at determining the relationship between elementary school students' gender, lesson success and their game preferences (Table 1).

While 78.5% of the participants said they play sportive games, 21.5% of them said no. On the other hand, when we look at the answers according to gender variable, X^2 analysis value of the answers was found to be 72.433. This value is statistically significant in 0.05 significance level ($P < 0.05$) (Table 2). So, there are significant differences among sportive game playing status of the participants. When given answers are examined in detail, it is seen that male students play more than female students.

33.5% of the participators play "rope skipping", 32.5% of them play "other games", 14.8% play "word games", 13.5% of them play "ball games" and 5.8% of the participants said that they were playing "touch". When we look at the answers given according to gender variable, comparative X^2 analysis value of the answers was found to be 71.281. This value is also statistically significant in 0.05 significance level ($P < 0.05$). Therefore, there are statistically significant differences among sportive game playing status of the participants. When given answers are examined in detail, it is seen that female students mostly play "rope skipping"; while boys play different games other than those mentioned above.

Of the computer games, 59.1% of the participants play "mind games", 28.6% of them play "sportive games", 12.3% said "action and fighting games" (Table 4). However, when we look at the answers according to gender variable, comparative X^2 analysis value of the answers was found to be 41.702. This value is also statistically significant in 0.05 significance level ($P < 0.05$). When given answers are examined in detail, it is seen that female students mostly play "mind games"; while boys prefer "action and fighting games".

75.1% of the participators said they play computer games "at home", 12.5% of them play at an "internet cafe", and 12% of the participants said they play computer games at "school computer labs". Nevertheless, when we look at the answers according to gender variable, comparative X^2 analysis value of the answers was found to be 13.813. This value is also statistically significant in 0.05 significance level ($P < 0.05$). In the detailed analysis of the table, girls play mostly "at home"; while boys play "at internet cafes".

The status of participants showing how often they play computer games was inquired. It was seen that 52.8% of them said they play computer games "1 to 2 h in a week", 32.8% of them play "1 to 2 h in a day", and 14.% of the participators said they play computer games 1 to 2 h in two days. However, when we look at the answers according to gender variable, comparative X^2 analysis value of the answers was found to be 22.500. This value is also statistically significant in 0.05 significance level. ($P < 0.05$). That is, there is a statistically significant difference of opinion between

genders about how often they play computer games. If we examine the table in detail, female students mostly play 1 to 2 h in a week while male students play 1 to 2 h a day.

In their answers showing their views on how games affect their lesson success, 69.5% of the participators said "it has no effect", 12.9% said "it affects the lesson success negatively, and 17.6% of the participators replied that "it enhances his/her lesson success" (Table 7). However, when we look at the answers according to gender variable, comparative X^2 analysis value of the answers was found to be 8.021. This value is also statistically significant in 0.05 significance level ($P < 0.05$). That is, there is a statistically significant difference of opinion for the respective gender variable. If the answers are examined in detail, it is seen that male students have the majority in the choice noting that it negatively affected their lesson success. For the overall answers, students are on the opinion that it has no effect at all (Roe and Muijs, 1998; Aktaran, 2004; Mitchell and Savill-Smith, 2001; Özmenler, 2010). In their research, they found out that children who are playing computer games have less interest in school and their time is limited for their lessons, the game affects their academic success negatively and lowers lesson success level; these findings are parallel with those in our research.

About the question on "how do the games affect the participants?" we see that, 62.8% of the participants said "it develops my skills", 30.6% said "I exhaust my energy and relax", and 6.7% of the participants replied that "I know my friend better through game." (Table 8) However, when we look at the answers according to gender variable, comparative X^2 analysis value of the answers was found to be 2.384. This value is not statistically significant in 0.05 significance level ($P < 0.05$). That is, we can say that there is no statistically significant difference of opinion. Depending on these data, it can be said that computer game are beneficial for the development of the individuals (Mangır and Aktaş, 1993). They stated that game provides such benefits as searching for knowledge, observing, developing new abilities, and moreover, students who play games with his/her friends learn to share, have positive interaction with the environment, respect for the rights of the others and taking responsibility. In Becta (2006) report published in England, stressed that computer games are very important for children even for the adults (Akbaş et al., 2009). Besides, they are on the opinion that computer games cause such benefits as thinking critical, providing to visual memory and long-lasting learning. (Inal and Çağıltay, 2005).

Despite these benefits of computer games, according to a research conducted by (Horman et al., 2005) most of the students using internet and spending their time playing computer games have a tendency towards weaning social development at a considerable rate, self-reliance of these children are low, social uneasiness and aggressive attitudes of them are at an high level.

When we closely examine the lesson success and

Table 9. Table of lesson success and sportive game playing status of the participants.

Variable	I play sportive game	I do not play sportive game	Total
85-100=5	172 (69.6%)	75 (30.4%)	247(100.0%)
70-84=4	214 (88.4%)	28 (11.6%)	242(100.0%)
55-69=3	50 (73.5%)	18 (26.5%)	68 (100.0%)
45-54=2	14 (87.5%)	2 (12.5%)	16 (100.0%)
Total	450 (78.5%)	123(21.5%)	573 (100.0%)

$\chi^2 = 27.432$, $P = 0.000$, $P < 0.05$.

Table 10. Lesson success and other game playing status of the participants.

Variable	Rope skipping	Touch	Word games	Ball game	Other	Total
85-100=5	62 (34.8%)	10 (5.6%)	31(17.4%)	32 (18.0%)	43 (24.2%)	178 (100.0%)
70-84=4	52 (32.7%)	8 (5.0%)	22 (13.8%)	14(8.8%)	63 (39.6%)	159 (100.0%)
55-69=3	10 (21.3%)	3 (6.4%)	6(12.8%)	6(12.8%)	22 (46.8%)	47 (100.0%)
45-54=2	6 (50.0%)	2(16.7%)	0 (0.0%)	2 (16.7%)	2 (16.7%)	12 (100.0%)
Total	130 (32.8%)	23 (5.8%)	59 (14.9%)	54(13.6%)	130 (32.8%)	396 (100.0%)

$\chi^2 = 24.008$, $P = 0.020$, $P < 0.05$.

Table 11. Lesson success and internet game preferences of the participants.

Variable	Mind games	Strategy games	Action and Fighting games	Sportive games	Total
85-100=5	102 (48.6%)	47 (22.4%)	18 (8.6%)	43(20.5%)	210(100.0%)
70-84=4	62 (28.4%)	44 (20.2%)	33 (15.1%)	79(36.2%)	218(100.0%)
55-69=3	21(33.9%)	14(22.6%)	8 (12.9%)	19(30.6%)	62(100.0%)
45-54=2	8 (50.0%)	0 (0.0%)	4(25.0%)	4(25.0%)	16 (100.0%)
Total	193 (38.1%)	105 (20.8%)	63 (12.5%)	145 (28.7%)	506 (100.0%)

$\chi^2 = 31.251$, $P = 0.000$, $P < 0.05$.

sportive game playing status of the participants, we see that 78.5% of them said “I play sportive game”, 21.5% said “I do not play sportive game” (Table 9). However, in the comparative statistical evaluation of the answers according to gender variable, comparative χ^2 analysis value of the answers was found to be 27.432. This value is also statistically significant in 0.05 significance level ($P < 0.05$). That is, there is a statistically significant difference of opinion for the respect of lesson success and playing games. When we examine the table in detail, it is seen that most of the students follow a sportive game, while successful students play less than those who are unsuccessful.

If we closely examine “lesson success” and “other game playing status” of the participants, we see that 32.8% of them said “rope skipping”, 32.8% said “other”, 14.9% said “word games”, and 13.6% said “ball game” and 5.8% of the participants replied that they play “touch” (Table 10). However, when we look at the answers according to gender variable, comparative χ^2 analysis value of the answers was found 24.008. This value is also statistically significant in 0.05 significance level ($P < 0.05$). That is, there is a statistically significant difference of opinion for the respect of game types and playing games. When the given answers were closely examined, there is a linear parallelism between lesson

success and game type and playing games. In the research, those having lower grade averages do not play word games, as the lesson success increases, it is seen that the possibility of playing word games also increases.

If we closely examine the given answers on lesson success and internet game preferences of the participants, we see that 38.1% of them said “mind games”, 28.7% said “sportive games”, 20.8% of them said “strategy games”, and 12.5% of the participants replied that they play “action and fighting games” (Table 11). However, when we look at the answers according to gender variable, comparative χ^2 analysis value of the answers was found to be 31.251. This value is also statistically significant in 0.05 significance level ($P < 0.05$). According to this outcome, there is a significant relationship between lesson success and internet game playing status. If we give a detailed examination on the table, it is seen that there are differences among those children, who have medium success level, lower grade averages and who have higher grade averages, in terms of playing game and game types. For the success levels, every student plays sportive games, those with lower grades play action and fighting games; student with higher grades play strategy games and all students play mind games

at all.

As a result of all these collected data, we can say that:

(i) In general, participants play sportive games; however, boys play sportive games more than girls, while girls mostly play rope skipping.

(ii) Of the computer games, mind games mostly preferred, according to gender differences, girls play mind games more than boys and boys play mostly sportive games, they usually play these games at home or on computer environment in school labs, they play usually 1 to 2 h a week; while according gender variable, boy play 1 to 2 h a day and girls play 1 to 2 h a week.

(iii) The games do not affect their academics either positively or negatively, but they help them develop their abilities and relax them by exhausting their energies.

For the respect of lesson success; on the other hand, most of the students play sportive games; they also play various games of other types; there is a linear parallelism between lesson success and game playing; that is, as lesson success increases, the number of those playing games also increases. Students, who have low lesson success, do not play word games. In terms of lesson success, most of the students play sportive and mind games of computer games; students with lower grades play strategy games.

SUGGESTIONS

The importance of game on the development of the children should be presented through various workshops, written and visual media.

Educative play grounds for children in various grounds in the cities should be built.

Various educative games should be used in education institutions as a means of education.

Game equipments should be presented for children so that they can develop in terms of physical and psychological, intellectual, psycho-social aspects.

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