

*Full Length Research Paper*

# **A study on the playing of computer games, class success and attitudes of parents to primary school students**

**Kadir Pepe**

Physical Education and Sports Department, Faculty of Education, Mehmet Akif Ersoy University, Burdur, Turkey.  
E-mail: [k\\_pepe@yahoo.com](mailto:k_pepe@yahoo.com). Tel: +90 2482131000/4111. Fax: +902482346009.

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This study is a descriptive study based on the screening model, and was conducted in order to inquire the effect of games and the relation between gender and class success variables and game preferences in primary school students. The universe of the study was the primary schools in city center in Province of Burdur and the sample group of the study was composed of students attending the 6, 7 and 8th grades of primary schools. In the study, data were obtained through written materials and a questionnaire which was specifically developed for the study. After intelligibility, validity and reliability of the questionnaire was ensured, the questionnaire was applied to the sample group by a random sampling method. Questionnaires of 605 students (318 males and 287 females) who fully completed the questionnaire were taken into evaluation. Data obtained were analyzed with proper statistical software on computer environment. As the statistical process, frequency (f), percentage (%) and cross-tables (Croostab) were used, whereas  $X^2$  (square X) process was carried out to determine the differences among variables. The statistical data revealed that there were significant differences in the computer games played by participating students, their class success and parents' attitudes vis-à-vis the games played ( $P < 0.05$ ). As a conclusion, we can suggest that there were differences in the types of the games played by the participating students; concerning the gender differences, males mostly played action and fighting games whereas females preferred mind games; they played these games at home, at internet cafes and at the computer lab in school; females often played these games at home or at school while males played computer games at home or at a internet café; males spent 1 to 2 h a day whereas females spent 1 to 2 h a week in playing games; concerning the age differences, those at age of 12 to 13 preferred playing mind games more than 14 to 15 year old students who mostly play sports, action or fighting games. There was a parallelism between game-playing frequency and having access to the Internet at home, those who have access to the Internet in their homes played 1 to 2 h a day while those without the Internet at home played computer games only for 1 to 2 h a week; those who spent less time on playing games on the Internet had a higher class success than those who spent more time on the Internet by playing games. Concerning the parents' attitude vis-à-vis children's playing games on the Internet – parents' mostly keep indifferent; and concerning the gender difference, we can say that parents of males are against the Internet games more than parents of females are.

**Key words:** Primary school, student, computer games, class success, parents, attitude.

## **INTRODUCTION**

One of the most distinctive characteristics of all the children in the world is to perceive the life as a game and to learn everything via games. Game is a common language and communication tool for children. Children develop themselves physically, mentally and psycho-socially

through games. Game is an activity which enables children to grow in all aspects and to acquire a personality. It is known that game is a common way of communication among all children. Game not only develops physical and mental structure of children but

also helps children establish relations and ties with the world of objects, gain freedom and personality and become socialized (Gürün, 1984). According to many researchers, game is a primary component for a healthy social, physical and mental development of children. Game is a process in which children learn by doing and get into interaction with the social and physical environment. It is also important how quality children spend their time and energy when playing games. It was seen that a child with quality game-playing opportunity is more creative and more flexible in solving problems, and has better social relations and is physically more healthy (Jaspert et al., 1988; Heseltine and Holborn, 1987; Hart, 1993). With technological advancements in our era, games played in societies have turned into technological games. The most widespread technology which is even in every single step of our lives today is computer and computer games.

Computers are one of the most developed tools of our world. When we look at the history of computers, we can see that computer games appeared shortly after appearance of computers in the market (Durdu et al., 2005). Dependence on computers has increasingly continued and been widespread with programs and software covering almost all age groups. In the midst of 1980s, students would spend 4 h per week in average by playing games on computers at their homes and game arcades whereas it is stated that it has reached up to 13 h a week today (Christakis et al., 2004). It is no doubt that computer games which children tirelessly play with such a great joy have a lot of benefits.

When we look at the benefits of computer games, it is seen as an ideal way for children to acquire computer literacy. Moreover, computer games are reported to have some benefits such as ensuring hand-eye coordination, spatial skills, imagination, the reasons of shapes, high thinking with geometry and mathematics, visualization of physics or chemistry-related objects, embodiment of shapes in the space and etc. (Cesarone, 1994).

Games are also known for their adverse impacts on both children and adults in addition to their benefits. A child or an adult who spends most of his time by playing games can develop some problems such as distorted social relations with the family or friends, deteriorated school or work life or addiction to games. As is the case for all other types of addiction, addicted people spend more and more time by playing games due to the increased pleasure and satisfaction out of playing. When such people spend too much time on playing games, they can have communication problems with their families and friends, and their school or work life can therefore be adversely affected (National Institute of Mental Health, 2005).

It is widely known today that the time and frequency of playing games on computer by children, youngsters and even adults have been increasing and reached up to addiction levels. The concept of "addiction" which refers

to an adverse situation can be defined as the constant failure to quit or to control using a substance or making a behavior (Egger and Rauterberg, 1996). Individuals can be addicted to not only a substance but also a problematic behavior. Addictions that are not based on a physical substance can be classified as behavior-based addictions which may include eating addiction, game addiction, computer addiction, television addiction, shopping addiction, internet addiction and so on (Kim and Kim, 2002). Both computer and video games can make addiction in children. Once a child starts playing, he constantly wants to play and cannot keep himself away from it even though he wants to do so. In these games, children can easily do what they cannot do in the real life and enjoys the achievement feeling as much as possible. Computer and video games can result in that children become day-dreamers and children cannot display the ambition for success in the games in their real lives. There are some games which have positive effect on mental development. However, addiction to computer games takes children away from the reality and real life.

Computer games and the Internet substitute the friends of the child or youngster and result in social isolation. Selnow was the first to introduce the "electronic friend" hypothesis. Selnow states that children consider that they spend their time best by playing computer games and have difficulty in establishing social relations; they have a limited number of friends and the content they share with their limited number of friends is only the video games they play (Selnow, 1984). A study conducted with 12 to 13 year old children yielded the following results: "Playing computer games is better than being with people", "the best way of spending the time is playing computer games", "playing computer games, I spend my time better than being with my friends", "I feel more active and lively when I play computer games", "Playing computer games helps me forget my loneliness" (Colwell and Kato, 2003). Horman et al., 2005, found out that social development of children who spend most of their time by playing computer games and browsing the Internet significantly regresses, and self-confidence of such children is very low whereas their social anxiety levels and aggressive behaviors were higher (Horman et al., 2005). Colwell and Payne determined a negative correlation between self-confidence and computer games-playing frequency (Colwell and Payne, 2000). Anderson and Bushman suggest that computer games result in aggression in children and youngsters. It is also stated that the type of the game, frequency and duration of playing are decisive in development of aggression in children and youngsters (Anderson and Bushman, 2001). Obviously, the computer technology which has had a significant place and penetrated into every single room in human life can be useful or harmful depending on how one uses it. This study aimed at examining the status of playing computer games, class success and attitudes of parents in primary school

**Table 1.** Gender distribution of participants.

Variable	Distribution (N)	Distribution (%)
Male	318	52.6
Female	287	47.4
Total	605	100.0

**Table 2.** Age distribution of participants.

Variable	Distribution (N)	Distribution (%)
12 to 13	386	63.8
14 to 15	181	29.9
Missing system	38	6.3
Total	605	100.0

**Table 3.** Distribution of participant according to type of the computer game.

Variable	Mind games	Action or fighting games	Sports 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%)

$X^2 = 41,702$ ,  $P = 0.000$ ,  $P < 0.05$ .

students.

## MATERIALS AND METHODS

The study was carried out to examine the status of playing computer games and attitudes of parents of primary school students. The universe of the study was the primary schools in city center in Province of Burdur and the sample group of the study was composed of students attending the 6th, 7th and 8th grades of 6 primary schools which were selected according to their socio-economic and development level to represent the universe. The data were obtained through a review of the literature and a questionnaire. After intelligibility, validity and reliability of the questionnaire was ensured, the questionnaire was applied to the sample group by a random sampling method. 605 students – 318 males and 287 females – participated in the study. Some participants did not respond to some of the questions in the questionnaire. Therefore, the number of participants might seem to be missing. Data obtained were analyzed with proper statistical software on computer environment. As the statistical process, frequency (f) and percentage (%) and cross-tables (Croostab) and  $X^2$  (square X) process were carried out. The data obtained were interpreted with a confidence interval of 0.05 in order to determine the percentage distribution of each question and the difference among variables.

## FINDINGS

As shown in Table 1, 605 students – 318 males and 287 females – participated in the study in total.

Table 2 inquires about the ages of participants. Accordingly, 63.8% of the participants were at the age of 12 to 13 while 29.9% were 14 to 15 years old. Table 3 inquires about the type of games which participants play on computers. An analysis of the answer given to this question in total reveals that 5.1% of students play mind games whereas 28.6% play sports games and 12.3% played action or fighting games. When we examine the answers according to the gender variable, the comparative  $X^2$  analysis value of the answers was found to be 41,702. This value is significant ( $P < 0.05$ ). Table 4 inquires about the correlation between the age of participants and type of computer games. The comparative  $X^2$  analysis value of answers given according to age groups was found as 7,172. This value is significant ( $P < 0.05$ ), which means that there are differences in types of computer games according to the age of students. In Table 5, participants were asked where they play computer games. An analysis of the answers given to this question in total reveals that 75.1% of students played computer games at home whereas 12.5% at an internet café and the remaining 12.3% in the computer lab in school. When we look at the answers according to the gender variable, the comparative  $X^2$  analysis value of the answers was found to be 13,813. This value is significant ( $P < 0.05$ ), which tells that there are differences in places where computer games are played according to genders. Table 6 inquires how frequently the participants play computer games. When

**Table 4.** Distribution of correlation between age of participants and type of the computer game.

Variable	Mind games	Action or fighting games	Sports games	Total
12 to 13	205 (63.3%)	36 (11.1%)	83 (25.6%)	324 (100.0%)
14 to 15	79 (50.6%)	21 (13.5%)	56 (35.9%)	156 (100.0%)
Total	284 (59.2%)	57 (11.9%)	139 (29.0%)	480 (100.0%)

$\chi^2 = 7,172$ ,  $P = 0.028$ ,  $P < 0.05$ .

**Table 5.** Distribution of places where participants play computer games.

Variable	Home	Internet cafe	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%)

$\chi^2 = 13,813$ ,  $P = 0.001$ ,  $P < 0.05$ .

**Table 6.** Distribution of frequency of playing computer games.

Variable	1 to 2 h a day	1 to 2 h in two days	1 to 2 h per 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.** The correlation between ages of participants and frequency of playing computer games.

Variable	1 to 2 h a day	1 to 2 h in two days	1 to 2 h per week	Total
12 to 13	111 (29.8%)	46 (12.4%)	215 (57.8%)	372 (100.0%)
14 to 15	59 (34.1%)	30 (17.3%)	84 (48.6%)	173 (100.0%)
Total	170 (31.2%)	76 (13.9%)	299 (54.9%)	545 (100.0%)

$\chi^2 = 4,623$ ,  $P = 0.099$ ,  $P > 0.05$ .

we examine the answers given to this question in total, we see that 52.8% of participants played computer games for 1 to 2 h per week while 32.8% played games for 1 to 2 h a day and 14.4% played for 1 to 2 h in two days. In the comparative statistical analysis of the answers given,  $\chi^2$  value was found to be 22,500. This value is significant ( $P < 0.05$ ), which shows that there were differences in frequency of playing computer games according to genders. Table 7 inquires about the correlation between ages of participants and frequency of playing computer games. In the comparative statistical analysis of the answers given by the participants according to the age variables, the  $\chi^2$  value was found to be 4,623. This value is not significant ( $P > 0.05$ ), which means that there is no significant difference in playing computer games according to ages. In Table 8, it was examined whether there is a correlation between frequency of playing computer games and “having

access to the Internet at home”. In the comparative statistical analysis of the answers given by the participants, the  $\chi^2$  value was found to be 12,729. This value is significant ( $P < 0.05$ ), which shows that there is a significant difference in frequency of playing computer games depending on having access to the Internet at home. In Table 9, it is inquired whether there is a correlation between frequency of playing computer games and class success of participants. In the comparative statistical analysis, the  $\chi^2$  value was found to be 16,321. This value is significant ( $P < 0.05$ ), which tells that there is a significant difference in frequency of playing games on the Internet depending on the class success of students. Table 10 inquires about the parents’ attitude vis-à-vis participants’ playing games on computer. When we look at the answers given to this question by the participants, we see that 52.8% of parents keep indifferent whereas 36.1% of parents are

**Table 8.** The correlation between frequency of playing computer games and having access to the internet at home.

Variable	1 to 2 h a day	1 to 2 h in two days	1 to 2 h per week	Total
Yes	148 (35.6%)	68 (16.3%)	200 (48.1%)	416 (100.0%)
No	43 (26.1%)	16 (9.7%)	106 (64.2%)	165 (100.0%)
Total	191 (32.9%)	84 (14.5%)	306 (52.7%)	581 (100.0%)

$\chi^2 = 12,729$ ,  $P = 0.002$ ,  $P < 0.05$ .

**Table 9.** Distribution of the correlation between frequency of playing computer games and class success of participants.

Variable	85 to 100=5	70 to 84=4	55 to 69=3	45 to 54=2	Total
1 to 2 h a day	66 (34.9%)	92 (48.7%)	23 (12.2%)	8 (4.2%)	189 (100.0%)
1 to 2 h in two days	32 (38.1%)	40 (47.6%)	10 (11.9%)	2 (2.4%)	84 (100.0%)
1 to 2 h per week	153 (50.7%)	104 (34.4%)	39 (12.9%)	6 (2.0%)	302 (100.0%)
Total	251 (43.7%)	236 (41.0%)	72 (12.5%)	16 (2.8%)	575 (100.0%)

$\chi^2 = 16,321$ ,  $P = 0.012$ ,  $P < 0.05$ .

**Table 10.** Distribution of parents' attitudes vis-à-vis participants' playing computer games.

Variable	Against	Supportive	Indifferent	Total
Male	131 (41.7%)	42 (13.4%)	141 (44.9%)	314 (100.0%)
Female	84 (29.9%)	24 (8.5%)	173 (61.6%)	281 (100.0%)
Total	215 (36.1%)	66 (11.1%)	314 (52.8%)	595 (100.0%)

$\chi^2 = 16,666$ ,  $P = 0.000$ ,  $P < 0.05$ .

against and 11.1% of parents support children to play computer games. In the comparative statistical analysis of the answers according to the gender variable, the  $\chi^2$  value was found to be 16,666. This value is significant ( $P < 0.05$ ), which tells that there is a significant difference in parents' attitudes depending on the gender of the student.

## DISCUSSION

This study was conducted in order to determine the status of playing computer games in primary school students, their class success and parents' attitudes vis-à-vis playing computer games. The study covered 605 students in total – 318 males and 287 females. 63.8% of participants are between the ages of 12 and 13 whereas 29.9% are 14 to 15 years old (Tables 1 and 2). When we analyze the answers given by the participants to the inquiry about “the type of computer games they play”, we see that 59.1% of students play mind games whereas 28.6% play sports games and 12.3% played action or fighting games. When we analyze the answers with respect to the gender variable, males tend to play sportive games and action and fighting games while females prefer playing mind games more. The

comparative  $\chi^2$  analysis value of the answers was found to be 41,702. This value is significant ( $P < 0.05$ ) (Table 3). It tells us that there are significant differences in the type of the computer games depending on the gender variable.

Studies on game-type preferences according to genders show that the gender variable is influential on game preferences. Compared to males, females usually prefer games which do not contain violence. Studies show that males prefer fighting, shooter, sportive, Fantasy Role Programming (FRP), and action/adventure games whereas females prefer traditional game-boards, card games/dices, quizzes and puzzles as well as platform games platform (Sherry et al., 2003; Fromme, 2003), which also supports our findings.

In the inquiry about the type of the computer game according to the ages of participants, when we analyze the answers according to the ages, we see that participants at age of 12 and 13 mostly play mind games while those at 14 or 15 years prefer playing sportive, action and fighting games. The comparative  $\chi^2$  analysis value of the answers given was found to be 7,172 (Table 4). This value is significant ( $P < 0.05$ ), which tells us that there are significant differences in types of computer games depending on the ages. We can say that, as the age goes up, action games and sportive games are more

and more preferred. The finding of Sherry et al. (2003) that the time spent on playing computer games increases and the type of the games becomes harsher, is in parallel with our findings in this study.

When we analyze the answers given by the participants to the question where they play the computer games, we see that 75.1% of participants play computer games at home while 12.5% of the play at internet cafes and 12.3% at school computer lab. When we examine the answers according to the gender variable, the comparative  $X^2$  analysis of the answers was found to be 13,813 (Table 5). This value is significant ( $P<0.05$ ), which tells us that there are differences in the places where computer games are played depending on genders of participants. According to our findings, we can say that females prefer playing computer games at home or at the school computer lab whereas males play computer games at home or in internet cafes.

When we analyze the answers to the question how frequently students play computer games, we see that 52.8% of participants played computer games for 1 to 2 h per week while 32.8% played games for 1 to 2 h a day and %14.4 played for 1 to 2 h in two days. In the comparative statistical analysis of the answers according to the gender variable,  $X^2$  value was found to be 22,500 (Table 6). This value is significant ( $P<0.05$ ), which shows that there are significant differences in frequency of playing computer games depending on the gender variable. Findings tell us that males mostly spend 1 to 2 h a day, whereas females play 1 to 2 h per week. İnal and Çağıltay (2005), Cassell, and Jenkins (1998), Sherry et al. (2003), Onay et al. (2005), Kelleci et al. (2009), Eow et al. (2009) and Chou and Tsai (2004) suggested that males spend more times on computer games than females do, which also supports our findings.

The correlation between the age of participants and frequency of playing computer games was also examined. In the comparative statistical analysis of the answers given to this question, the  $X^2$  value was found to be 4,623 (Table 7). This value is not significant ( $P>0.05$ ), which means that there is no significant difference in frequency of playing computer games depending on the ages of participants. When we make an in-depth analysis of the table, we can say that students at age of 12 to 13 play games less than children at the age of 14 to 15 do although the difference is not significant.

When it was examined whether there is a correlation between playing computer games and having access to the Internet at homes, in the comparative statistical analysis of the answers given to this question, the  $X^2$  value was found to be 12,729 (Table 8). This value is significant ( $P<0.05$ ), which tells us that there is a correlation between having access to the Internet at home and frequency of playing computer games. Findings show that those with access to the Internet at home play computer games for 1 to 2 h a day whereas those without access to the Internet at home play

computer games only 1 to 2 h a week. Yılmaz (2008) found that an individual who does not have a computer at home has far less access to computers than those with a computer at home, which supports our findings.

In the comparative statistical analysis of the answers given to the question whether there is a correlation between the class success and frequency of playing games on the Internet, the  $X^2$  value was found to be 16,321 (Table 9). This value is significant ( $P<0.05$ ), which means that there is a significant difference in frequency of playing games on the Internet depending on class success. When we make an in-depth analysis of the table, we see that grades of those who play computer games for 1 to 2 h per week (50.7%) were (85 to 100=5), whereas grades of those who play for 1 to 2 h a day (48.7%) and grades of those who play for 1 to 2 h in two days (47.6%) were (70 to 84=4). According to these findings, we can say that those who play fewer games on the Internet are more successful than those who play more games. Roe and Muijs (1998); reported by Mitchell and Savill-Smith (2004) and Özmenler (2001) found that those who frequently play computer games had less interest in classes, and playing computer games consumes out the time for making homework and adversely affects academic success and reduces the class success, which is in line with our findings in the study.

The parents' attitude vis-à-vis students' playing computer games was also examined. When we analyze the answers given to this question, we see that 52.8% of parents keep indifferent while 36.1% are against and the remaining 11.1% supports their children playing computer games. In the comparative statistical analysis of the answers according to the gender variable, the  $X^2$  value was found to be 16,666 (Table 10). This value is significant ( $P<0.05$ ), which shows us a deep difference in parents' attitude depending on the gender variable. According to the findings, we can say that parents' of the participants generally keep indifferent whereas, according to the genders, parents of males are against computer games more than the parents of females are, which can be attributed to the adverse effect of frequently-played computer games on school success.

## Conclusion

From these findings, we can say that participants play mind games, sportive games, action and fighting games and when we look at the difference between males and females, males prefer fighting and action games while females play mind games. According to the age variable, those at age of 12 to 13 prefer mind games more than those at age of 14 to 15 do while the latter prefers playing sportive, action and fighting games. Students generally play games at home, at internet cafes and school computer lab, females play games at home and at school

whereas males play games at home and at internet cafes. Males spend 1 to 2 h a day by playing computer games whereas females play computer games for 1 to 2 h per week. Although there is no significant correlation between the age variable and playing computer games, those at age of 12 to 13 play games less than those at age of 14 to 15 do.

There is a correlation between having access to the Internet at home and frequency of playing computer games, and those with access to the Internet at home play games for 1 to 2 h a day whereas those without access to the Internet at home play computer games for 1 to 2 h per week. Students spending less time in playing games on the Internet are more successful in classes than those who spend more time playing games.

Concerning the parents' attitude vis-à-vis students' playing computer games, parents are mostly indifferent, according to the genders, parents of males are against internet games more than parents of females are.

## RECOMMENDATIONS

Children may not be able to distinguish what is good or bad for them. They may not be able to plan time very well. Therefore, it is a primary role for parents and educators to teach and help children comprehend what is good for them. A computer game-timetable should be prepared for children. It must be pre-determined when and how long they can play computer games. Children should be directed to self-development games when they are on the computer. In order to prevent children from spending too much time on the Internet, social activities which will enable them to spend more time with their friends should be organized. Children should be channelized to cinema, theater and sports activities.

Parents should allocate more quality time to their children and care about their problems. Children should be briefed about using computers and be advised to use computers for useful things and not to spend too much time on playing computer games.

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