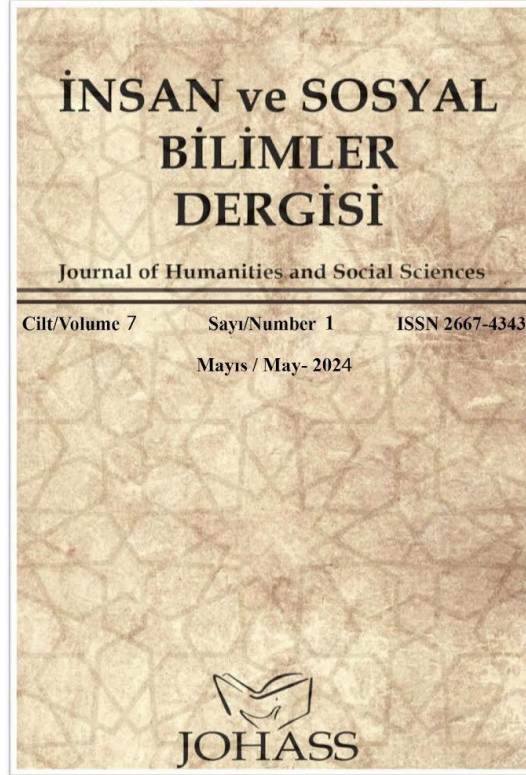# JOURNAL OF HUMAN AND SOCIAL SCIENCES (JOHASS)

The Effect of Intelligence Games on Primary School 4th Grade Students' Mental Skill Levels

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Abstract	Research Article
This research was aimed to analyze the effects of intelligence games on the mental skill levels of fourth grade students. The research was carried out in a public school located in Manavgat district of Antalya province. The study group of the research consists of 40 volunteer students (20 in the experimental group, 20 in the control group) studying in two different branches of the 4th grades in the spring term of the 2021-2022 academic year. The research was designed in the form of a pre-test and post-test control group and the quantitative data of the research were collected through the 'Mental Skill Assessment Test' developed by Marangoz (2018). The experimental group was given a total of 16 hours of intelligence games training for eight weeks, two lessons per week (80 minutes). In the research, a valid and reliable ready-made test developed by Marangoz (2018) (Mental Skill Assessment Test) was used to evaluate students' mental skill levels (concentration of attention, strategic thinking, analysing, part-whole relationship, visual perception and use of clues). This test was applied to the experimental and control groups as a pre-test and post-test. The Normality Test was conducted to investigate the normal distribution of the data as a result of the research. In the research, 6 different intelligence games were used for eight weeks. In order to examine the relationship between the pre-test and post-test scores of the experimental and control groups before the application, the dependent sample t-test was performed. In the research, it was observed that there was a significant increase in the mental skills of the experimental group students, who were played 6 different intelligence games for eight weeks. According to the results of the research, we can say that intelligence games improve the mental skills levels of students.

Keywords: Intelligence games, mental skills, game, intelligence, primary school.

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Introduction

Children can play anytime, anywhere and in any situation, regardless of time, place or circumstances they play. Although game seems like a simple and childish word, it is actually very important. There is no child who does not play. Because for them, the game is much more than what adults think. While the child playing they have fun also thinks, learns, applies, comprehends, cooperates, develops strategy, reason, seeks solutions, adapts. Play is the child‫'s purest and most spiritual occupation (Akandere, 2003). Vygotsky emphasized the importance of games and thought that children are free to experiment, try to play a role and make use of the materials during the game and therefore they can exceed normal skill limits. (Aksoy & Dere Çiftçi, 2018). For the child, play is as important and effective as nutrition, love, care and development (Koçyiğit, Tuğluk and Kök, 2007). So what is the game that is so important for children? According to Karaman (2012), play can be carried out with or without a specific purpose, with or without rules, but in any case, the child participates willingly and enjoys it; It is the most effective learning process, which is the basis of physical, cognitive, language, emotional and social development, is a part of real life and allows the child to express himself. In another definition; It is an activity that enables the child to learn on his own by experiencing, for the purpose of having fun and being internally motivated, sometimes with defined and known rules, sometimes developing spontaneously, and consisting of behaviors that include feelings of happiness, enthusiasm, excitement and curiosity (WEB1).

Based on the definitions, the effect of games on learning becomes more evident day by day. In todays educational approaches, it is frequently emphasized that games should be used in effective and permanent learning, scientists such as Donald Winnicott, Jean Piaget, Lev Vygotsky, Jérôme Bruner they state that the game is effective in their physical development (Marangoz, 2018). When we look at the education approach of both our country and other countries in the world, we can see how effectively games are included, especially at the primary school level. In the game, the child is constantly as a mental activity. In other words, the game can also be called the mental training of the child (Özer et al. 2006).

The individual must have mental skills such as problem solving, analysis, reasoning, critical, reflective and strategic thinking in order to keep up with this world where information, science and technology are rapidly growing and their importance increases day by day, and to have a share in this development. The education-teaching process is effective

in having these skills and developing them. It can be said that games, which are effective in the development of mental skills as well as their effect on learning, should be included more in education and training. Game is a more effective method than other teaching techniques because it moves the student from a passive state to an active state (Aytekin, 2001; Darwish et al. 2001; Gazezoğlu, 2007). In general terms games and intelligence games in particular, can be described as tools that can serve this purpose (Dempsey et al. 2002).

In general, intelligence is defined as the capacity to think and reason in both concrete and abstract ways, utilising perceptions and the ability to apply these mental functions to a specific purpose (Devecioğlu and Karadağ, 2016). Intelligence games are learning material that require the use of skills such as reasoning, problem solving, spatial relations and strategic thinking and support their development (Taş ve Yöndemli, 2018). Intelligence games referred to as learning material hat help students recognize and develop their intelligence potential, develop different and original strategies in the face of problems, make fast and accurate decisions, develop a systematic mindset and working skills individually, create a positive attitude towards problem solving (MEB, 2013). Intelligence games allow the individual to use his existing intelligence, enables its development and implementation.

Ministry of National Education 2012-2013 education with the elective mind games course included in the curriculum in 2009. It is aimed for students that realise their intelligence development potential, perceive and evaluate problems and develop different and original strategies for these problems, gain different perspectives, develop their potential by using reasoning and logic effectively, develop the ability to focus on a subject or problem, learn to make the right decision, develop a systematic thinking structure, develop individual and team working skills, and develop a positive attitude towards problem solving. Developing mental skills and capacity as well as in turn, thanks to mind games, students can develop their own abilities and skills with individual or group work. They will know and develop their potential better and increase their self-confidence (Marangoz, 2018). Intelligence games consist of 3 steps and it is necessary to progress gradually.

STEP 1-Beginner Level: Learning the rules of the games, basic knowledge and skills it includes winning, playing beginner games, and solving puzzles.

STEP 2–Intermediate: Making logical inferences, from the right place in puzzles start, apply basic strategies in strategy games, play intermediate games and Includes solving puzzles.

STEP 3-Advanced: Thinking creatively, analyzing, putting forward original strategies, includes high-level knowledge and skills such as evaluation and generalization. Playing advanced games solving puzzles and benefiting from the experiences of others are included in this step (MEB, 2013).

The main purpose of teaching is to enable students to use what they learned at school in daily life. According to İpşiroğlu (2002), it enables students to overcome the problems they face with their own efforts (Şimşek, 2007) and learning how to improve themselves throughout their lives is to teach (Özden, 1997). Individuals who make mind games a part of their lives, not only with numbers and shapes, but also with real-life materials will be required. This gives them different ways of solving problems when faced with real-world problems will teach them to use methods, will enable them to develop solutions against problems (Devecioğlu and Karadağ, 2014). Cognition, which refers to the mental processes involving the perception, interpretation and learning of the environment in which the individual lives, is evaluated within the scope of many areas such as perception, attention, memory, reasoning, problem solving and creativity (Aydın, 1999; Bayhan San ve Artan, 2009). In the literature, it is seen that intelligence games are effective in the mental skills of the individual (concentration of attention, strategic thinking, analysing, establishing a part-whole relationship, visual perception and using clues). For this purpose, it is very important to use intelligence games in the education curriculum (Demirel ve Yılmaz, 2016).

When the researches on intelligence games are examined, the studies mostly students; academic achievements, spatial skills, problem solving skills, attention gathering and communication skills (Alkaş Ulusoy, Saygı, & Umay, 2017; Altun, 2017; Altun, Hazar and Hazar, 2016; Baki, 2018; Bottino, & Ott, 2006; Demirkaya, 2017; Zirawaga, Olusanya & Maduku, 2017). On the other hand, primary school level intelligence games studies investigating the effect on mental skills are very limited. Because; In this study, the effect of intelligence games on the mental skills of 4th grade students made to research. In line with these purposes, answers to the following questions were sought in the study.

1. Is there a difference between the pretest scores of the experimental group and the control group in terms of mental skills sub-levels (concentration of attention, strategic thinking, analysing, part-whole relationship, visual perception and use of clues)?

2. Is there a difference between the post-test scores of the experimental group and the control group in terms of mental skills sub-levels (concentration of

attention, strategic thinking, analysing, part-whole relationship, visual perception and use of clues)?

Method

Model

Experimental research design, one of the quantitative research methods, was used in this study. Experimental research, in order to test the cause-effect relationship, the data suitable for the valid criteria are collected by the researcher. It is an environment arrangement under the control of which variables are produced, evaluated and variables are constructed. Datas the researcher produces and does not use previously produced data. Quasi-experimental artificial or natural takes place in environments under the control of the researcher (Karasar, 2016). Experimental research the sub-headings of the model were created with a random pre-test post-test control group design. This within the scope of the research, 6 different intelligence games determined by the researcher were played in the 4th grade of primary school. This design was used because it was aimed to determine whether the mental skills of the students developed after the application of 6 different intelligence games determined by the researcher to the experimental group of 4th grade primary school students.

Table 1

Pre-Test and Post-Test Control Group Model

Groups	Pre-Test	Process	Post-Test
Experimental Group	x	8-week intelligence games training	x
Control Group	x	-	x

As seen in Table 1, pretest-posttest control group design was used in the study and it lasted 8 weeks. While the control group received training with intelligence games in the specified period, the control group received training with the traditional method.

The research consists of two dependent and independent variables. Dependent variable in the research mental (concentration of attention, strategic thinking, analysing, part-whole relationship, visual perception and use of clues) skill levels. If the independent variable affects students' mental skills (concentration of attention, strategic thinking, analysing, part-whole relationship, visual perception and use of clues) are intelligence games.

Study Group

Multi-stage sampling technique was used to determine the study group of the research (Cohen, Manion and Morrison, 2002). First of all, the schools where the research will be carried out are sampling determined by the method. From the Turkish Statistical Institute (TSI) with Antalya province Manavgat district center in line with the relevant data, schools with a middle socio-economic level were determined. As a result of the interviews, the schools that participated voluntarily were determined. These schools are the study was started with "A" Primary School, which was selected by using random sampling method among the students. More then, the fourth-grade teachers of "A" Primary School were interviewed and the volunteers to participate in the study were interviewed branches are determined. Data collection tools were applied to the branches and there was no significant difference between them among the branches that do not have the same gender, age and teaching experience are close the study was completed with two fourth grade branches belonging to teachers. One of these branches is the experimental group, the other was assigned as the control group. The study group of the research consisted of Antalya province in the spring term of 2021-2022 academic year. 40 students (20 of them in the experimental group and 20 of them in the control group) attending the 4th grade of a primary school in the town of Manavgat.

Table 2

Distribution of Students in Experimental and Control Groups by Gender and Research Group

Groups	Gender					
	Girl		Boy		Total	
	f	%	f	%	f	%
Experiment group (4-A)	12	60	8	40	20	50
Control group (4-B)	9	45	11	55	20	50

When the distribution of students in the experimental and control groups by gender and research group is examined, the number of girl students in the experimental group was 12 (60%), the number of boy students was 8 (40%), while the number of girl students in the control group was 9 (45%), and the number of boy while it was determined as 11 (55%).

Intelligence Games Used in Research

Information about the independent variable of the study, intelligence games and the rules of the games are given in Table 3 Intelligence games used in this study: Mangala, Sumo Küpü, 3 Taş, 9 Taş, Reversi, Hedef 5 (TBT, 2014).

Before determining the intelligence games to be used in the research, a literature review was conducted by examining domestic and foreign studies. A pool of intelligence games and related skills was created. This list was submitted to the approval of 2 field experts, a language expert and 3 classroom teachers and the intelligence games to be used in the study were determined.

Table 3

The Characteristics of the Intelligence Games Used in the Research and the Contributed to Its

Development Skills

Intelligence Games	Rules	Skills
Mangala	In the game, the player tries to protect his territory and seize the opponent's territory. While doing this, it takes into account the 4 basic game rules. The player who captures one or more of the half of the 48 pieces in the game wins the set. A total of 5 sets are played.	Using clues, Analysing, Concentration of attention
Sumo Küpü	The aim of the Soma cube game is to create the visual perception, shapes given in the instruction using the pieces.	Part-whole relationship Strategic thinking, Analysing
3 Taş	In 3 Taş, each player has three pieces, the aim is to form the first three on the game board and prevent the opponent from forming a three while doing so.	Analysing Strategic thinking, Part-whole relationship
Reversi	The game always starts with a formation of four in the center. Both players choose their colors. Black always starts the game. A new disk is placed in an empty cell. This empty cell must be adjacent to any cell occupied by a disk of the opposite color. The placed disk has to take some of the opponent's disks between it and another disk of the same color already on the floor in any direction (horizontal, vertical, diagonal). As soon as this is done, the opponent's discs between these two discs are inverted and become the disc of the player who made the move and are returned to his color. It is reminded that the aim of the game is to try to turn the opponent's discs into their own color in this way. If a player does not have a valid move, he must pass. If one player has a valid move, he cannot pass. If neither player has a valid move, the game is over, even if there are empty cells on the board.	Part-whole relationship Concentration of attention Strategic thinking, Analysing
Hedef 5	The game is played between two people. The next player drops their checkers down any gap.The first quintet, provided that the aim is to make the first five on the condition that it is horizontal, vertical and diagonal is to do.	Visual perception, Part-whole relationship Concentration of attention Strategic thinking

9 Taş	Logical thinking when placing pieces or when all placements have been made, the each player's goal is to strategically think along the lines on the game board, lines to form a trio and make sure their opponent's to prevent the formation of a trio.	Analysing Strategic thinking, Part-whole relationship

Data Collection Tools

For data collection, an achievement test developed by Marangoz (2018) measuring six different mental skills (concentration of attention, strategic thinking, analysing, part-whole relationship, visual perception and use of clues) was used. While using this test, necessary permissions were obtained from the test owner. The validity of the test has been confirmed by the expert opinions received by the Marangoz. The reliability of the test was calculated using the KR-20 test. The test result was 0.71, which shows that the test to be used is reliable. For each question in the 1st part of the test, time was kept and all students were asked to answer the questions at the same time, at the specified time. Thus, it was tried to measure how much the students could concentrate their attention in the given time. In the second part of the test, students were asked to solve the test at their own pace. Information about the questions aiming to measure the sub-dimensions of the 29-question test is given below.

Table 4

Questions Aiming to Measure the Sub-Dimensions of the Test

Sub-Dimensions	Concentration of attention	Strategic Thinking	Analyzing	Part-Whole Relationship	Visual Perception	Use of Clues
Items of the Scale	1, 2, 3, 4, 5, 6, 8, 11, 12, 13, 15, 18, 21, 26, 28 ve 29.	9, 13, 14, 18, 22, 23 ve 29.	9, 11, 12, 14, 15, 16, 19, 20, 22, 23, 24, 25, 26, 27 ve 28.	7, 10, 14, 16, 17, 19, 20 ve 27.	2, 3, 5, 7, 8, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 24, 28 ve 29.	7, 8, 10, 11, 12, 17, 22, 24, 25, 26 ve 27.

Data Collection

For the research, an application for ethical permission was made to Alanya Alaaddin Keykubat University and necessary permissions were obtained. In this research, in the second semester of the spring term of 2021-2022 academic year, Antalya province Manavgat. The study was carried out with 4th grade students studying in a public school located in the district of Antalya. Intelligence games were determined by the researcher to improve the mental skills (concentration of attention, strategic thinking, analysing, part-whole relationship, visual

perception and use of clues) in the research. The determined intelligence games were covered by the Manavgat Science and Art Center. A 8-week daily plan has been prepared to determine how and in what order the games will be played. After the preparations were completed, a pre-test was applied to the experimental and control groups and the applications were started with the experimental group in line with the plan. No application was made to the control group.

Analysis of Data

The raw data from the pre-test and post-test applied to the experimental and control groups were analyzed using the SPSS 22 package program. In the study, the normal distribution was investigated in order to determine the analysis method. In this study, the normality values of the data were measured using the Shapiro-Wilk and Kolmogorov-Smirnov tests. After examining the normality distributions of the data, the independent sample t-test was calculated and tabulated using the SPSS program.

Ethical Committee Approval

Ethical permission for the study was obtained from Alanya Alaaddin Keykubat University by the researchers. The compliance of the study with ethical principles was approved by the decision numbered 2022/05 taken by the Scientific Research Ethics Committee of Alanya Alaaddin Keykubat University in the field of Social and Human Sciences at the meeting held on 11/10/2022.

Findings

In this study, it was aimed to examine the effects of intelligence games on the mental skill levels of fourth grade students. In the pre-test and post-test results of the experimental and control groups, each sub-step of mental skills (concentration of attention, strategic thinking, analysing, part-whole relationship, visual perception and use of clues) were examined to see whether there was a statistical difference. The findings obtained are presented in Table 5.

1.1. The Mental Skill Levels of the Experimental and Control Group Students and Values of the Pretest Normality Test Average Scores

Table 5

The Mental Skill Levels of the Experimental and Control Group Students and Values of Pre-

Test Normality Test Mean Scores

	Kolmogorov-Smirnov [a]			Shapiro-Wilk		
	Statistics	df	Shallow.	Statistics	df	Shallow.
Experimental Group Pre-Test	,132	20	,200 [*]	,967	20	,687
Control Group Pre-Test	,152	20	,200 [*]	,933	20	,176

In the test performed to understand whether it comes from a normal distribution in Table 5., it was seen that the p value was greater than 0.05. Therefore, it was understood that the data came from a normal distribution. Since the data came from a normal distribution, paired sample t-test (dependent two-sample t-test) was applied in order to examine the relationships between the variables.

1.2. Mental Skill Levels of the Experimental and Control Group Students and Values of the Posttest Normality Test Average Scores

Table 6

The Mental Skill Levels of the Experimental and Control Group Students and Values of the

Posttest Normality Test Average Scores

	Kolmogorov-Smirnov [a]			Shapiro-Wilk		
	Statistics	df	Shallow.	Statistics	df	Shallow.
Experimental Group Post-Test	,159	20	,199	,926	20	,129
Control Group Post-Test	,169	20	,138	,926	20	,128

In Table 6., it was observed that the p value was greater than 0.05 in the test performed to understand whether the post-test mean scores of the experimental and control groups came from a normal distribution. Since the data came from a normal distribution, the independent sample t-test was applied to examine the relationships between the variables.

1.3. Mental Skill Levels of Experimental and Control Group Students Pre-Test Scores Findings Regarding Averages

In order to determine whether there is a difference between the mental skill levels of the experimental and control groups, an independent sample t-test was performed on the results of the pre-test applied and shown in Table 7.

Table 7

Values of the Mental Skills Levels of the Experimental and Control Group Students and their Pre-Test Mean Scores

Mental Skills Sub-Dimensions		N	Average	SS	t	p
Pre-test	control	20	34	10,74097	0.041	0.515
	experiment	20	34.15	12,37687	0.041	
Concentration of attention	control	20	26.3	8.74252	0.032	0.348
	experiment	20	26.4	10,98516	0.032	
Part-whole relation	control	20	4.45	1,66938	0.188	0.837
	experiment	20	4.55	1,70062	0.188	
Analysing	control	20	8.6	3.31504	0.049	0.553
	experiment	20	8.65	3.13344	0.049	
Visual perception	control	20	22.35	7,70014	0.411	0.592
	experiment	20	23.3	6,89088	0.411	
Use of cues	control	20	7.65	2,34577	0.505	0.26
	experiment	20	8	2,02614	0.505	
Strategic thinking	control	20	3.15	1,56525	0.283	0.862
	experiment	20	3	1,77705	0.283	

The t-test results for the significance of the difference between the pre-test mean scores of the control and experimental groups are given in Table 7. According to the pre-test results of the control and experimental groups, no statistically significant difference was found in the dimensions of concentration of attention, strategic thinking, analysing, part-whole relationship, visual perception and use of clues (p>0.05). Accordingly, it is seen that there is no significant difference between the experimental and control groups. According to these data, it can be said that the groups were taken from the same universe, that is, they are equivalent. The pre-test scores in the control group was X=34 and the average of the students in the experimental group was X=34.15. The close values in the pre-test averages in the Part-Whole Relationship sub-dimension can be interpreted that the students' ability to establish a part-whole relationship was at the same level before the study. While the average of the analysis skills of the students in the control and experimental groups in the pre-test was =8.6

in both groups X; In the visual perception dimension, the average of the students in the control group is X= 22.3, and the average of the students in the experimental group is X=23.3. In the dimension of use of clues, the average of the students in the control group is X= 7.6, and the average of the students in the experimental group is X=8. In the strategic thinking dimension, while the control group average is X= 3.1, the experimental group average is X=3. The closeness of the mean values means that there is no significant difference between the experimental and control groups in terms of dimensions.

1.4 Findings Regarding Mental Skill Levels Post-Test Scores of Experimental and Control Group Students

The post-test scores of the experimental and control groups are given in Table 8.

Table 8

Values of Mental Skill Levels Post-Test Mean Scores of Experimental and Control Group Students

Mental Skills Sub-Dimensions		N	Average	SS	t	p
Post-test	Control	20	38,4000	9.62125	-7,441	,000
	experiment	20	63,6500	11.7351	-7,441	,000
Concentration of attention	control	20	31,0000	8,05899	-7,803	,000
	experiment	20	54,2000	10,57604	-7,803	,000
Analysing	control	20	7,6000	2,64376	-4,129	,000
	experiment	20	10,6500	1,98083	-4,129	,000
Part-whole relationship	control	20	4,5000	1,76218	-1,678	,102
	experiment	20	5,3500	1,42441	-1,678	,102
Strategic thinking	control	20	3,2000	1,50787	-2,494	,017
	experiment	20	4,4000	1,53554	-2,494	,017
Visual perception	control	20	24,0500	5,63331	-6,665	,000
	experiment	20	36,0500	5,75349	-6,665	,000
Use of Clues	control	20	7,3000	1,86660	-3,828	,000
	experiment	20	9,1500	1,08942	-3,828	,001

Table 8 shows the post-test averages of the experimental and control groups. The difference in the sub-dimensions of concentration of attention, strategic thinking, analysing, visual perception and use of clues obtained as a result of the independent groups t-test to determine whether there is a significant difference between the post-test mean scores of the

groups, was found to be statistically significant (p< 0.05). Only the "part-whole relationship" sub-dimension of mental skills was found to be large (p>0.05). According to these results, while there was no significant difference only in the "part-whole relationship", the experimental group showed a significant difference compared to the control group in all other sub-dimensions.

While the average of the concentration of attention skills at the students in the control group in the post test was =31, the average of the students in the experimental group was $\overline{X}$=54. The close values in the pre-test averages in the part-whole relationship sub-dimension and the averages of the students' ability to part-whole relationship were found to be $\overline{X}$=4.5 for the control group and $\overline{X}$=5.3 for the experimental group after the study. While the average of the analysis skills of the students in the control group in the post-test was $\overline{X}$=7.6 it was observed that it was $\overline{X}$=10.6 in the experimental group. In the visual perception dimension, the average of the students in the control group is $\overline{X}$= 24, and the average of the students in the experimental group is $\overline{X}$=36. While the average of the students in the control group is $\overline{X}$= 7.3, In the dimension of use of clues, the average of the students in the exprerimental $\overline{X}$=9.1. In the strategic thinking dimension, while the control group average is $\overline{X}$= 3.2, the experimental group average is $\overline{X}$ =4.4.

Result and Discussion

In this study, while investigating the effect of intelligence games on mental skills, it is aimed to draw attention to the importance of the effect of intelligence games on children's cognitive skills and to create an awareness for intelligence games at the same time. In his study, Kurbal (2015) mentions that the intelligence games course improves the reasoning and problem solving skills of the students. Demirel (2015), on the other hand, revealed that lesson activities with intelligence games have a positive effect on students' academic success and problem solving skills. The results of the tests applied before and after the games training revealed that there was a significant difference in favor of the post-test. When we analyzed the independent sample t-test results applied to the pre-test and post-test data of the experimental and control groups, no significant change was observed only in the "part-whole relationship" sub-skill. According to this result, although the control group did not receive intelligence game training, they showed a slight improvement in this sub-skill. However, when the averages of the data were examined, it was seen that the experimental group showed

more improvement than the control group.

When the studies on intelligence games are examined, Marangoz and Demirtaş (2017) talk about the effect of intelligence games on the mental skills of 2nd grade students. In this study, it has been proven by the analyzes that intelligence games improve mental skills. Keskin (2009) concluded that visual games strengthen attention. In the study conducted by Devecioğlu and Karadağ (2014), it was revealed that if the goals and behaviors to be determined with the mind games course are taught to students, it can contribute to the development of students' cognitive, affective and psychomotor competencies. Çetinbaş Gazeteci (2014) mentions the positive effect of science teaching supported by game activities on critical thinking and academic achievement. When we scan the literature on the effect of intelligence games on mental skills, we come across Marangoz (2018) investigated the effect of intelligence games on the mental skills of 2nd grade students. The results of these studies are in parallel with our study. In our study, only "establishing a part-whole relationship" did not show a significant improvement, but in all other sub-dimensions (concentration of attention, strategic thinking, analysing, visual perception and use of clues), the experimental group showed a significant difference compared to the control group.

Through play, the child learns to use his intelligence, discovers the world and the environment, acquires knowledge, satisfies his sense of curiosity, learns to reason and make choices (Uğurlu et al. 2012). For this reason, giving more play in the field of education can be applied in different classroom levels and for different lessons, and it can be examined whether children develop in other mental sub-skills or not. It is seen that TTKB prepared the Intelligence Games Course Curriculum in 2013. However, during this study, it was observed that there were not enough course materials, the necessary environment and a sufficient number of trained instructors in schools. All of the materials used in this study were provided by the researcher. This limited the variety and number of games. The content of these applications made in schools can be examined. Apart from intelligence games, it can be researched which activities will improve mental skills. At the same time, the effect of intelligence games on different dimensions of mental skills can be investigated.

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