

Grade Level and Creativity

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Abstract

Problem Statement: Creativity has been addressed by many scientists and thinkers. Among them, Guilfort regards creativity as the ability to generate new ideas, and relates it to intelligence. According to Thurstone, creativity must develop and be implemented within a theoretical framework, and a solution must result. Torrance thinks of creativity as a scientific research process and sequences its steps.

Purpose of Study: This study was conducted to explore whether significant differences in average fluency, flexibility, originality, elaboration, and total scores of students are observable on the basis of class level or gender, to determine whether a primary school curriculum that has been implemented for 6 years has significantly improved the creative thinking skills of students.

Methods: The quantitative and qualitative methods were applied in the study. To this end, 172 students from grades 3 to 8 attending a primary school in Çankaya District of Ankara were selected randomly. Descriptive data analysis was conducted on the qualitative data. The data gathered from focus groups were analyzed using qualitative content analysis.

Findings and Results: Significant differences were found in average fluency, flexibility, originality, elaboration, and total scores of classes. Fluency, flexibility, originality, elaboration, and total scores of the 5th graders were the highest compared to other classes. On the other hand, the 6th grade students' scores were the lowest. Fluency, flexibility, originality, elaboration and total scores increased from the 3rd to the 5th grade, but declined to their lowest levels in the 6th year. Scores increase once more in the 7th grade, only to fall again in the 8th grade.

Conclusions and Recommendations: Significant differences were found in average fluency, flexibility, originality, elaboration and total scores with

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respect to class levels and gender. These findings are also supported by the outcomes of some other studies. It is stressed that there is a significant relation between class level, gender, and creativity. The significant difference exhibited by the 5th grade students in terms of four areas and total creativity scores can be explained by the fact that their ideas and products related to creativity enjoyed the support of their friends, families, and teachers. In order to improve children's creative thinking, teachers and the parents should be supported by further training programs.

Keywords: Primary school, curriculum, student, creativity, classroom.

Education seeks to help students attain top-level targets. These targets fall within the category of "synthesis" in Bloom's taxonomy. At the level of synthesis, the student is expected to come up with an original and new theory, model, suggestion for a solution, etc. that goes beyond what is already known. In this context, the person has to present an invention, suggest a model, etc.

Creativity has been addressed by many scientists and thinkers. Among them, Guilfort regards creativity as the ability to generate new ideas, and relates it to intelligence (Guilfort, 1950, 1968). Kris supports the same view. There are also others who understand creativity as the ability to solve problems (Mumfort & Gustafson, 1988).

According to Thurstone, in order for creativity to exist, there must first be a theoretical framework, this framework must be put into practice, and the identified problem should be solved at the end. The theoretical framework may be related to all spheres of life, including thought, the arts, the sciences, etc. What matters is the novelty and originality of the theoretical framework. It is also important that creative thinking go beyond existing known solutions and models (Torrance, 1965a; Taylor, 1972; San, 1979; Urban, 1991).

These criteria for creativity can be grouped with respect to three dimensions: production, professional criteria, and social criteria. In terms of production, reference can be made to patent rights acquired by the person concerned. In terms of professional criteria, the reference may be to person's fame and reputation in his or her profession, and social criteria may consider what his or her colleagues say about the person concerned (Amabile, Hennessey & Grossman, 1986). Personal characteristics may also be added to these criteria (MacKinnon, 1962; Getzels & Jackson, 1962). These criteria regard the end product as primary in describing creativity.

Torrance considers creativity to be a scientific research process, and identifies its by describing steps within a sequence. First, there must be awareness and sensitivity regarding what is conceived as a problem or what is missing. Then, hypotheses must be advanced—in other words, approximated solutions that are tested over and over again. If some hypotheses prove to be inappropriate, they are either improved or replaced by others to be tested again, and the process of testing continues until a

solution to the problem is reached (Torrance, 1962). In a sense, this process follows the experimental research logic of Dewey (Dewey, 1910).

Mott defines four steps in creativity: Preparation, incubation, discovery (inspiration), and control. In the first step, data relating to the problem are collected, and various responses are developed and tried as solutions. The person is engaged in a process of trial and error. This first step may be too short or too long. At the incubation stage, the brain concentrates on what the solution could be. It organizes data and synthesizes it with earlier experiences. At the stage of discovery (inspiration) the solution suddenly appears, just like Archimedes running out of the bath naked, declaring, "I found it!" At the control stage, the solution is applied to the problem. If the problem is indeed solved, then the result is confirmed and the solution is proven. As can be seen in this process, creativity is a mental activity in which all potential capabilities inherent in human beings are mobilized and further developed. Human beings are gifted with curiosity, interest, invention and discovery, and the ability to synthesize and remould thoughts (Mott, 1973). There are also some who defend the idea that there is a relationship between a given cultural structure and creativity (Öncü, 1989, 2000, 2003).

If the given cultural structure provides support and reinforcement to creative persons, then creative activities flourish (Taylor, 1972; Cohen, 1988). Scholars also state that levels of intelligence, monetary rewards, and environments with ample occasions to engage in warm, flexible, and creative activities are the factors that improve a person's ability to engage in divergent thinking (Thistlewaite, 1963; Knapp, 1963; Torrance, 1965a). However, some other researchers assert that monetary rewards and reinforcement are detriments to creativity, and there is no significant relationship between intelligence and creativity (Mumford & Gustafson, 1988). Moreover, investigations have also been carried out to see whether there is a meaningful relationship between creativity and factors such as education and school systems, teachers' attitudes, or training in creativity and intelligence games. Results are divided: while some studies found this relationship meaningful, others did not (Feldhusen & Treffinger, 1975; Thomas & Berk, 1981; Woodman & Feldt, 1990; Wang & Tzeng, 2007). In some studies conducted in Turkey, a significant relationship was found between the level of creativity and a set of other factors including the following: Level of education, school performance and success in courses, fields of education, secondary school attended, leisure time activities, sex, age, class level, intelligence games, playing, ways of learning, problem-solving skills, training in arts, economic status, father's educational background, socio-demographic characteristics, teachers' behaviour, and type of school (Öncü, 1989; Sungur, 1992; Ataman, 1992; Öncü, 2000; Öncü, 2003; Görgen & Karaçelik, 2009; Ersoy & Başar, 2009).

Starting in 2005, the Turkish Education System began to design curricula using a constructivist approach and started to implement the curricula beginning in primary education. One of the basic objectives of this approach is to help students reach high-level achievements. Creative thinking is among these achievements.

This study aimed to find out the following: Does the existing primary school curriculum meaningfully affect students' creative thinking skills? Do significant differences between average fluency, flexibility, originality, elaboration, and total scores exist by class level and sex? What are the opinions of students in this regard?

Method

Working Group

The study was conducted with 172 students from grade 3 to 8 attending a primary school in Çankaya District of Ankara. Grades 1 and 2 were excluded from the survey. A purposive convenience sampling technique was used in the study. Since it was necessary to reach individual students directly and three students were randomly selected from the third, fifth, and sixth grades, respectively, the most convenient group was used in the qualitative survey.

Data Collection and Data Analysis

The Torrance test of creative thinking was given students by grades. Students' scores on the fluency, flexibility, originality, and decorative part of the test, as well as their total scores, were calculated by two experts in the field.

Semi-structured focus group interviews were conducted with these groups and students' opinions were recorded. These records were analyzed by two experts. Due to some articulation problems, statements made by some students were later corrected after asking them for clarification.

Results

This section examines, comments on, and explains data on creativity-related fluency, flexibility, originality, elaboration and total scores of students from grade three to grade eight covered by the survey.

Data Relating to the First Sub-problem

Data relating to the question of whether there are significant differences between the average fluency scores of grades are given below in Table 1.

Table 1

Class Level and Fluency Scores

<i>Grades</i>	<i>N</i>	<i>M</i>	<i>SD</i>
3rd grade	34	33.44	9.51
4th grade	40	32.17	7.70
5th grade	21	37.95	3.91
6th grade	17	29.23	7.29
7th grade	16	35.06	8.64
8 th grade	44	30.23	9.62

As can be seen in Table 1 above, average fluency scores are as follows: year 3: 33.44; year 4: 32.17; year 5: 37.95; year 6: 29.23; year 7: 35.06; and year 8: 30.23. T-tests were used to check for significant differences between fluency scores. The findings are given in Table 2 below.

Table 2

t Values for Differences Between Fluency Scores, by Class

Grades	4rd.	5th.	6.th	7th.	8th.
3rd.	.63	2.44*	1.6	.59	1.46
4th.		3.2*	1.33	1.22	1.01
5th.			4.37*	1.36	3.51*
6th.				2.09*	.44
7th.					1.04

According to Table 2, differences between grade 5 and grades 3, 4, and 8, as well as between grade 6 and grade 7 are significant at various degrees of freedom, with a level of significance of .05. According to the same table, students in grade 5 have the highest score in fluency. Based on this data, it is possible to say that fluency scores first increased in grade 5, decreased to its lowest level in grade 6, increased again in grade 7 and then fell once more in grade 8. It can be said that there is a significant difference between classes in terms of fluency scores, and the lowest score in this regard belongs to grade 6. Given this fact, focus group interviews were conducted with three randomly selected students from grade 5, which had the highest score, and three from grade 6, which had the lowest. Outcomes obtained are presented below after some corrections in articulation that do not slant the content:

K.5. I tried to use my imagination. I closed my eyes and thought "What I can make out of these figures." Nobody blocked me?

K.5. No friend blocked me. I can convert the letter "S" into a rose.

K.5. I did it on my own without receiving help from anybody else.

K.6. I drew those pictures inspired by people around me and their behavior. Nobody stood in my way; my family helped me a lot.

K.6. I usually observe outside while developing my ideas. Usually nobody helps.

K.6. My father and mother help me.

Fluency: Fluency can be described as the talent of using words or pictures to produce several acceptable ideas concerning a specific subject and selecting the most valuable ones among them. A person can further develop this talent if placed in an environment that supports creativity. In such an environment, the person concerned

is encouraged, supported and provided various means to succeed; the person is not degraded or scolded in cases of failure. This allows the person to build self-confidence by using his or her imagination and thinking without taking outside help. He/she becomes a good observer, and tries again and again. This process supports the development of creative thinking (Milne, 1996).

As can be inferred from their responses, the 5th grade students confirmed this conclusion by saying "I used my imagination," "I drew it on my own," "I received help from nobody," "I observed outside," and "I tried it again." Students from the 6th grade, on the other hand, said they received help from their parents or other family members. Receiving help means parents too are involved, and in such cases children may act under their parents' influences, which may block creativity.

Data Related to the Second Sub-problem

Table 3 below provides data on whether there is any significant difference between the average flexibility scores of classes.

Table 3

Grades and Flexibility Scores

<i>Grades</i>	<i>N</i>	<i>M</i>	<i>SD</i>
3rd	34	20.38	5.41
4th.	40	20.92	5.15
5th.	21	25.38	4.36
6.th	17	17.00	4.80
7.th	16	23.00	7.60
8th.	44	19.00	6.10

According to Table 3, the average flexibility scores of each grade are as follows: grade 3: 20.38; grade 4: 20.92; grade 5: 25.38; grade 6: 17.00; grade 7: 23.00 and grade 8: 19.00. A t-test was used to determine whether there are significant differences between the flexibility scores. Findings are given in Table 4 below.

Table 4

t Values for Differences in Flexibility Scores, by Grades

<i>Grades</i>	<i>4th.</i>	<i>5th.</i>	<i>6th.</i>	<i>7th.</i>	<i>8th.</i>
3rd.	.44	3.75*	2.28*	1.39	1.00
4th.		3.55*	2.75*	1.18	1.51
5.th			5.62*	1.20	4.76*
6th.				2.72*	1.39
7th.					2.06*

Table 4 shows that with the exception of the fifth and seventh grades, the differences between classes as well as the difference between the sixth and seventh and seventh and eighth grades are significant at a .05 significance level and various degrees of freedom. According to the data in Table 3, the 5th grade has the highest score on flexibility. Given these data, it can be said that flexibility scores rise in the fifth grade, reach their lowest level in sixth grade, increase again in seventh grade, and then fall in eighth grade. It can further be stated that there are significant differences between classes in terms of flexibility scores, with the 6th grade being the lowest. Given these findings, focus group interviews were conducted with three randomly selected students from the fifth grade, which scored the highest, and three from the sixth grade, i.e. the lowest scoring class. Outcomes obtained are presented below after some corrections in articulation.

K.5. My family supports me a lot. So do my friends.

K.5. They had no influence in any behavior of mine.

K.5. They just supported me in my ideas and that's all.

K.6. For example, if I think different in any matter and if it is reasonable, they receive it well. But if it is absurd, they show me the correct way.

K.6. They do not interfere with my ideas. I have reasonable ideas in general. There are cases when I fly too high, but they approve if they find it logical. If not, they correct what does not make sense.

K.6. They say "come on..., it is just impossible."

Flexibility is when a person can think about many aspects of an issue and can change his ideas. Flexibility requires one to see an issue or an event from different angles and change a specific stance when it becomes necessary (Torrence, 1966). To improve flexibility scores, it is necessary to provide educational environments that allow students to develop new ideas in addition to what has been said about fluency. In such environments, students' new ideas should be given due account, they should not be made fun of or corrected. Their desire and zeal for changing their ideas should be supported. As a matter of fact, when creativity declines, there are also significant drops also in scores on personal traits such as excitement and understanding (Öncü, 1989). If children develop low levels of trust in parents, teachers, and friends, it becomes more difficult to develop original ideas since the cultural and educational environment that students are immersed in will often lead them to think in stereotypes. In such cases, students who move beyond stereotypes may be considered annoying, and this may undermine original thinking.

The responses of students in the fifth grade confirm this: "My family supports me and my ideas a lot. They had no influence in any behavior of mine." Students from grade six, on the other hand, say "They say 'come on... when they find something illogical. They show the correct way if then find something absurd." Such behavior may undermine creativity. It can be said that the difference between the fifth and sixth grade derives from this point.

Data Related to the Third Sub-problem

Table 5 below provides data on whether there are significant differences between the average originality scores of classes.

Table 5*Grades and Originality Scores*

<i>Grades</i>	<i>N</i>	<i>M</i>	<i>SD</i>
3rd.	34	10.38	5.34
4th.	40	13.65	6.86
5th.	21	17.14	6.51
6th.	17	11.56	6.70
7th.	16	14.25	5.38
8th.	44	11.40	6.87

According to Table 5, the average originality scores of the classes are as follows: grade 3: 10.38; grade 4: 13.65; grade 5: 17.14; grade 6: 11.56; grade 7: 14.25; and grade 8: 11.40. T-tests were used to check for significant differences between originality scores, and findings are given in Table 6 below.

Table 6*t Values for Differences Between Originality Scores, by Grades*

<i>Grades</i>	<i>4th.</i>	<i>5th.</i>	<i>6th.</i>	<i>7th.</i>	<i>8th.</i>
3rd.	2.19*	3.95*	.65	2.29*	.70
4th.		1.92	1.05	.31	1.49
5th.			2.57*	1.47	3.25*
6th.				1.25	.09
7th.					1.67

Table 6 shows that all differences between grades, with the exception of those between fourth and third grade and between fifth and fourth and seventh grade are significant at a .05 significance level and various degrees of freedom. According to the data in Table 6, the fifth grade has the highest score in originality. Given these data, it can be said that originality scores rise in fifth grade then decline in sixth grade, increase in seventh grade and then fall again in eighth grade. It can further be stated that there are significant differences between classes in terms of originality scores, with the third grade scoring the lowest. As a result, focus group interviews were conducted with three randomly selected students from the fifth grade, which had the highest score, and three from the third grade. Outcomes obtained are presented below, with some corrections in articulation.

Originality can be described as a person's skill and competence in developing new and original ideas, or producing and presenting invaluable works. It is the talent of generating unique original responses regarding an issue or an event (Torrence, 1966). In addition to what has been said above concerning creativity, students' extraordinary or divergent ideas must be supported and encouraged. In fact, students are hesitant to express such ideas for fear of being scolded or mocked by their teachers, parents, and friends. In such environments, if students are not comfortable with parents, teachers, and friends it becomes more and more difficult to think originally; this means that the cultural and educational environment surrounding the student will produce stereotypical thought. Moves beyond these stereotypes may be found annoying, and inhibited, thus precluding original thinking.

K.5. Of course my family supports me a lot. So do my friends.

K.5. We talk about and discuss places that I have never thought of or seen. I receive positive or negative responses depending upon the case.

K.5. I asked them and they accepted it if it sounded plausible and rejected if not. I received normal responses.

K.6. For example when I talk about my supernatural powers, they say it is not so desirable since everything would be too easy if I had and life would have no meaning.

K.6. In general I receive positive responses. I think my ideas make sense.

K.6. They say there is too much exaggeration; it is too difficult to have it.

As can be inferred from the responses given, students in fifth grade confirmed the conclusion above with statements like "my family supports me a lot", "we talk about and discuss places that I have never thought of or seen" and "I received normal responses." On the other hand, students in sixth grade say, "when I talk about my supernatural powers, they say it is not so desirable since everything would be too easy" or "they say there is too much exaggeration in my ideas." Such responses or reactions may undermine creativity, and it is possible to conclude that the difference between the fifth and sixth grades derives from this point.

Data Related to the Fourth Sub-problem

Table 7 below provides data on whether significant differences exist between the average elaboration scores of classes.

Table 7*Grades and Elaboration Scores*

<i>Grades</i>	<i>N</i>	<i>M</i>	<i>SD</i>
3rd.	34	56.44	17.42
4th.	40	53.37	14.29
5th.	21	59.95	12.41
6th.	17	51.94	23.05
7th.	16	55.93	10.27
8th.	44	52.56	14.40

According to Table 7, the average elaboration scores of the classes are as follows: grade 3: 56.44; grade 4: 53.37; grade 5: 59.95; grade 6: 51.94; grade 7: 55.93; and grade 8: 52.56. T-tests were used to check for significant differences between elaboration scores, and findings are given in Table 8 below.

Table 8*t Values for Differences Between Elaboration Scores, by Class*

<i>Grades</i>	<i>4rd.</i>	<i>5th.</i>	<i>6th.</i>	<i>7th.</i>	<i>8th.</i>
3rd.	.81	.87	.77	.10	1.07
4th.		1.86	.28	.65	.25
5th.			1.28	1.07	2.01*
6th.				.63	.12
7th.					1.02

In Table 8, the difference between grades five and eight is significant at a level of .05 with 63 degrees of freedom. Data in Table 7 shows that students from the fifth grade have the highest scores in elaboration. It can thus be concluded that elaboration scores rise in fifth grade and fall in eight. It can further be stated that there is a significant difference between the elaboration scores of grades five and eight, while the sixth graders had the lowest scores on elaboration. Focus group interviews were conducted with three randomly selected students from the fifth grade, which had the highest score, and three from the sixth grade. Outcomes obtained are presented below with some corrections in articulation.

Elaboration (enriching, detailing) requires lengthening the process of thinking, giving details and synthesizing ideas. Elaboration is observed in some works that are meant to be more complex by adding some simple stimulus (Torrence, 1966; Rıza, 1999). In this step, students were asked to create an original composition out of a given figure. Students may act freely and embellish the original figure while doing this exercise. Success in this step depends on imagination, the ability to think of as many changes as possible, and level of maturity.

K.5. While developing my ideas I am inspired by pictures and it helps me as I try to interpret.

K.5. First I imagined to strike a new idea and then I tried to draw it on paper. I modified those parts that I found not so good.

K.5. I make lots of changes and I use a variety of colors and figures.

K.6. While making this I thought about how I should proceed.

K.6. I try to give a shape to the figure in line with what I think it should look like. My feelings at that moment, happiness, sadness, excitement, etc., affect what the figure eventually looks like.

K.6. By observing the outside world and by imagining.

As can be inferred from the responses of students, this conclusion is supported by statements made by fifth grade students such as "I get inspiration from pictures," "I imagined," "I made a lot of changes," etc. Students from sixth grade, on the other hand, made remarks such as "I thought about how I should proceed," "I thought about what it should look like," "My feelings at that moment, happiness, sadness, excitement, etc., affect the figure," and "by observing the outside world and by imagining." These orientations may also support creativity. The difference between the two classes may derive from the level of maturity that each displays.

Data Related to the Fifth Sub-problem

Table 9 below provides data on significant differences between the average total scores of classes.

Table 9

Classes and Total Creativity Scores

<i>Grades</i>	<i>N</i>	<i>M</i>	<i>SD</i>
3rd.	34	121.08	30.43
4th.	40	120.12	22.57
5th.	21	140.42	19.95
6th.	17	110.41	33.17
7th.	16	127.62	28.44
8th.	44	113.09	29-36

According to Table 9, the average creativity scores of the classes are as follows: grade 3: 121.08; grade 4: 120.12; grade 5: 140.42; grade 6: 110.41; grade 7: 127.62; and grade 8: 113.09. T-tests were used to check significant differences between creativity scores, and findings are given in Table 10 below.

Table 10**T Values for Differences Between Total Creativity Scores, by Class**

Classes	4rd.	5th.	6th.	7th.	8th.
3rd.	0.15	2.58*	1.14	0.74	1.74
4th.		3.46*	1.28	1.04	1.22
5th.			3.45*	1.61*	3.85*
6th.				1.60	0.30
7th.					1.70

According to Table 10, the fifth graders had the highest total creativity score, while the sixth grade had the lowest. The differences between the total creativity scores of class five and all other classes were found to be significant at a level of .05 and various degrees of freedom. Hence, it can be concluded that total creativity scores of students increase from grades three to five and then fall from grades five to eight.

Focus group interviews were conducted with three randomly selected students from fifth grade, which had the highest score, and three from the sixth grade, which had the lowest. Outcomes obtained are presented below with some corrections in articulation.

K.5. We were engaged in discussion over a case. Everybody spoke out his ideas; each of us presented some real case and we were engaged in brainstorming over it. I enjoyed it.

K.5. He posed a question to solicit responses from us. I get curiosity and pleasure out of it.

K.5. Yes, we discuss a lot in classes. We say this is not the way and the other is the right one. We practice brainstorming a lot.

K.6. Yes I used it. I gave thought to the course matter and I put it in practice.

K.6. There is brainstorming.

K.6. We do it, though not so frequently. In our Turkish class we read out texts and discuss them.

As can be inferred from the responses of the students, students from grade five supported this conclusion by making such statements as "We were engaged in case study and brainstorming; I like it and I am so curious." Students from grade six, on the other hand, say, "Yes, I've used it; we do brainstorming, not so frequently, but we do it." The reason why there are significant differences between the total creativity scores of grades five and six can be explained by referring to the comments made in the previous four sub-problems. The difference may also be related to enjoyment, curiosity, and desire for novel experiences. On the basis of this information, the curricula in effect cannot be said to have a significant impact on total creativity scores, since all students say they use brainstorming methods in their

classes. There is a significant increase in total creativity scores through fifth grade, and they fall from grade five to eight.

Data related to the Sixth Sub-problem

Table 11 below gives information on significant differences between fluency, flexibility, originality, elaboration, and total scores by grade and gender.

Table 11

Fluency, Flexibility, Originality, Elaboration, and Total Creativity Scores by Grade and Gender and F Value

Source	TcsII Sum of Squares	df	Mean Square	F	Sig
Intercept.	1987382,022	1	1987382,022	3149,948	,000
Gender	4385,491	1	4385,491	6,951	,009
Error	107257,312	170	630,925		

Table 11 uses variance analysis to determine whether average fluency, flexibility, originality, elaboration, and total scores of students vary significantly with respect to class level and gender. Observed F values were found to be meaningful at a level of .05 with 1-170 degree of freedom. On the basis of these results, it can be said that there is a significant relationship between gender and creativity scores. Creativity scores are affected by gender and grade level. These findings are supported by the outcomes of other surveys.

Discussion and Conclusion

A significant difference was found between average fluency, flexibility, originality, elaboration, and total scores of classes. Scores increased significantly from third to fifth grade and then fall from sixth to eighth grade. The sixth and eighth grades had the lowest average scores. Yet, in any effective curriculum, creativity scores are expected to rise as class level increases. These findings are also supported by the findings of some other studies (Torrance, 1965b; Emir, 2001; Grgen& Karaelik, 2009). A meaningful relationship between age and gender was demonstrated as well. In cases where creativity scores decline, there are also decreases in scores related to excitement and understanding, and vice-versa. In focus group interviews students confirmed this conclusion with statements like "I like it," "I am curious about it," "I enjoy it," and "they expect something different." The significant difference between class five and others in terms of the four areas and total creativity scores can be explained by the support given to these students in their creative activities by their families, teachers, and friends. As a matter of fact, some studies suggest that such activities flourish in cases where parents, teachers, and

closer environments reward and consolidate creative behavior (Taylor, 1972; Cohen, 1988; Mumford & Gustafson, 1988). In addition, strategies, methods, techniques and materials used in educational environments may also affect creativity (Kırmızı, 2007; Alacapınar, 2007; Alacapınar, 2008; Balım, 2009; Sayan & Hamurcu, 2011). On the basis of these findings, it can be said that there are many variables affecting creativity (San, 1979; Sönmez, 1992; Senemoğlu, 2007).

According to these findings, the following may be supportive of creative thinking: Asking students to come up with new, different, and original ideas and giving them support in this process; giving them positive feedback when they do; avoiding punishment, degradation, or teasing; encouraging them to think creatively by emphasizing that they are talented in this respect; encouraging them to ask questions; listening to their ideas carefully and respectfully; letting them find their own mistakes in the process rather than immediately marking them; and supporting their individual learning endeavors and mobilizing different methods, strategies, and techniques of learning and teaching in education environments (Torrance, 1965a,b; Ataman, 1992; Sünbül, 2001; Tezci & Dikici, 2003). Moreover, for an individual to engage in creative activity it may be necessary to be practical, appreciative, and skillful in the cognitive, affective, and psychomotor domains. Without having current and correct information, skills, and feelings, one cannot be expected to develop new, original, and unique thinking and put it into practice. It is also necessary for any society to respect and reward creative ideas, products, practices, and those engaged in these endeavors. Yet, in our culture and education system, most of the elements mentioned above that promote creativity are absent or unused. Even worse, there are cases where those who think creatively are punished, mocked, or despised. Traditional structures still predominate, a finding that is widely supported.

It may be necessary for teachers and parents to undergo training in creativity. No students should be mocked for their "fantastic" views or ideas. Furthermore, there should be more time and space in education environments for projects, brainstorming, multiple intelligence theory, decision-making processes, station techniques, case studies, problem solving, and systematic teaching, and such environments should be further enriched. Students who produce creative output should be rewarded. New experimental and qualitative research is necessary on both the grade and course level.

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Sınıf Düzeyi ve Yaratıcılık

Atıf:

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(Özet)

Problem durumu: Eğitimde üst düzey hedeflerin öğrencilere kazandırılması amaçlanır. Bu hedefler Bloom taksonomisinde sentez düzeyinin kapsamı içindedir. Sentez düzeyinde öğrencinin özgün, bilinenin dışında, yeni bir kuram, çözüm önerisi, model vb. ortaya koyması beklenir.

Yaratıcılık pek çok bilim adamı, düşünür tarafından ele alınıp incelenmiştir. Bunlardan Guilford yaratıcılığı yeni düşünceler oluşturma olarak ele alır ve zekayla ilişkili olduğunu ileri sürer. Bunun yanı sıra yaratıcılığı problem çözme yeteneği olarak düşünenler de vardır. Thurstone'a göre yaratıcılık düşünsel açıdan kuramsal bir çerçeve oluşturmali, bu kuramsal çerçeve uygulanmalı ve uygulama sonucunda sorun çözümlmelidir. Kuramsal çerçeve düşün, sanat, bilim vb. yaşamın tüm alanlarıyla ilgili olabilir.

Torrance, yaratıcılığı bir bilimsel araştırma sürece gibi düşünür. Onun basamaklarını sırasıyla belirler. Önce sorunun fark edilmesini, yani duyarlı olmayı ve eksik yanlarının saptanmasını ister. Sonra denenceler kurulmasını, yani tahmini çözümlerde bulunulmasını, denencelerin test edilmesini, eğer bu denenceler uygun değilse onarılmasını, ya da yenilerinin kurulmasını ve tekrar test edilmesini ve bu işin sorunun çözümüne kadar sürdürülmesini savunur. Bu süreç, bir bakıma Dewey'in bilimsel araştırma mantığını içerir, ama Torrance bu sürecin yalnız bilim adamlarıyla ilgili olmadığını, aynı zamanda düşünürlerin, sanatkarların da bu süreci kullandıklarını belirtir. Yaratıcı düşünme sürecini başka türlü ele alanlar da vardır. Yaratıcılığın aşamalarını Mott dört basamak olarak belirler. Birinci basamak hazırlık, ikincisi kuluçka, üçüncüsü buluş (ilham), dördüncüsü ise denetlemedir.

Kültürel ortamlarla yaratıcılık arasındaki ilişki, bazı araştırmacılar ve düşünürler tarafından ele alınmıştır. Ayrıca kişinin zeka düzeyinin, parasal ödüllerin, sıcak esnek ve yaratıcı etkinliklerin yoğun olduğu ortamların kişinin iraksak (divergent) düşünme ölçümlerindeki yeterliğini yükselttiğini; bazıları ise bunların yaratıcılığı düşürdüğünü ileri sürmüşlerdir.

Araştırmanın Amacı: Uygulanmakta olan ilköğretim yetiştirme, öğrencilerin yaratıcı düşünme becerisini anlamlı derecede etkilemekte midir? Bu konuda öğrencilerin görüşleri nedir? Türk eğitim Sistemi 2005 yılından itibaren yapılandırmacılık anlayışına göre yetiştirme düzenledi ve ilköğretimden itibaren uygulamaya koydu. Bu eğitim anlayışının temel amaçlarından biri, bireyleri üst düzey kazanımlarla donatmaktır. Bu üst düzey kazanımlar arasında yaratıcı düşünme de vardır.

Araştırmanın Yöntemi: Araştırmada, nicel araştırmanın tarama modeli ile nitel araştırmanın yarı yapılandırılmış odak grup görüşmesi kullanıldı. Nitel veriler üzerinde betimsel veri analizi yapıldı. Öğrencilerin sınıf düzeyine göre Torrance'ın yaratıcı düşünme testi A formunun akıcılık, esneklik, özgünlük, süsleme bölümlerinden aldıkları puanlarla toplam puanları iki uzmanca belirlendi. Bu puanlar arasında anlamlı bir farkın olup olmadığı t testiyle yoklandı. Bu araştırmada evren ve örneklem saptanmasına gidilmedi. Uygun durum çalışma grubu kullanıldı. Araştırma Ankara'da Çankaya ilçesinde bir ilköğretim okulunun üçüncü sınıfından sekizinci sınıfa kadar olan toplam 172 öğrenci üzerinde yapıldı.

Araştırmanın Bulguları: Sınıf düzeyi ve cinsiyete göre akıcılık, esneklik, özgünlük, süsleme ve toplam puan ortalamaları arasında anlamlı bir fark bulunmuştur. Beşinci sınıfların akıcılık, esneklik, özgünlük, süsleme ve toplam puanları, diğer sınıflara göre en yüksektir. Buna karşın tüm alanlarda en düşük puan ise, altıncı sınıf öğrencilerine aittir. Akıcılık, esneklik, özgünlük, süsleme ve toplam puanlar üçüncü sınıftan beşinci sınıfa doğru yükselmekte, altıncı sınıfta en düşük düzeye inmekte, yedide tekrar yükselmekte ve sekizde yeniden düşmektedir. Bu verilere dayanarak uygulanmakta olan ilköğretim yetişeginin yaratıcılıkla ilgili becerileri istenilen düzeyde gerçekleştirdiği söylenemez; çünkü beşinci sınıfa doğru yükselen yaratıcılık puanları, beşinci sınıftan itibaren anlamlı derecede düşmüştür. Bu konuda en yüksek puan alan beşinci sınıf öğrencileri ve en düşük puanı alan altıncı sınıf öğrencileri arasından şans yoluyla seçilen üçer öğrenciyle odak grup görüşmesi yapılmıştır. Beşinci sınıf öğrencileri " Hayal ediyorum. Resimlerden ilham alıyorum. Çok fazla değişiklik yapıyorum. Kafamı kullandım. Beyin fırtınası yaptık. Tartıştık. Merak ettim. Zevk aldım. Hoşuma gitti." gibi düşüncelerini belirtmişlerdir. Altıncı sınıf öğrencileri ise "Yapmayın derler. Hadi canım bu olmaz. Vay canına bu da çok abartılı olmuş. Bunu yapmak çok zor." demişlerdir. Bu yanıtlardan da anlaşılacağı gibi beşinci ve altıncı sınıflar arasındaki anlamlı farkın ailenin, öğretmenlerin tutumlarından, eğitim ortamında kullanılan öğrenme-öğretme yöntemlerinden, öğrencinin duyuşsal alandaki gelişmelerinden kaynaklandığı söylenebilir.

Araştırmanın Sonuçları ve Önerileri: Sınıfların akıcılık, esneklik, özgünlük, süsleme ve toplam puan ortalamaları arasında anlamlı bir fark bulunmuştur. Bu bulgular bazı araştırma sonuçlarıyla da desteklenmektedir. Sınıf düzeyi ile yaratıcılık arasında anlamlı bir ilişkinin olduğu vurgulanmıştır Ayrıca yaş ve cinsiyetle de yaratıcılık arasında anlamlı bir ilişkiden söz edilebilir. Yaratıcılık puanlarının düştüğü dönemlerde heyecanlılık, anlayışlık puanlarında da düşüşler olmaktadır. Yükseldiği dönemlerde de yaratıcılık puanlarının buna paralel olarak arttığı saptanmıştır. Yapılan odak grup görüşmesinde de öğrenciler "Zevk alıyorum. Merak ediyorum. Hoşuma gidiyor. Farklı bir şey istiyorlar" diyerek, bu görüşleri desteklemişlerdir. Beşinci sınıf öğrencilerinin dört alandaki ve toplam yaratıcılık puanlarındaki anlamlı fark; arkadaşlarının, ailelerinin, öğretmenlerinin yaratıcılıkla ilgili ürünlerini, görüşlerini desteklemeleriyle de açıklanabilir. Nitekim yapılan bazı araştırmalarda ailenin, anne-babanın, öğretmenin, çevrenin yaratıcı davranışlara ödül vermesi, pekiştirmesi, bu tür etkinlikleri artırdığını göstermektedir.

Öğretmenlerin, Anne-babaların yaratıcılıkla ilgili bir eğitimden geçirilmeleri gerekli olabilir. Öğrencilerin uçuk düşünceleriyle, görüşleriyle alay edilmemelidir. Ayrıca eğitim ortamında yaratıcılığı geliştirebilen proje tekniğine, beyin fırtınasına, çoklu zeka kuramına, karar verme sürecine, istasyon tekniğine, örnek olaya, problem çözmeğe, dizgeli eğitime daha sık yer verilmeli ve ortam zenginleştirilmelidir. Yaratıcı ürünler ortaya koyan öğrenciler çeşitli biçimde ödüllendirilmelidir.

Anahtar Sözcükler: İlköğretim, eğitim programı, öğrenci, yaratıcılık, sınıf düzeyi