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The Relationships between Studying in Different Fields of the Fine Arts, Environmental Factors and Creative Thinking Skills

Sibel Çoban[1], Birce Doğramacıoğlu[2], A. Esra Aslan[3]
[1]*Fine Arts Dept., Atatürk Education Faculty, Marmara University, Istanbul, Turkey*
[2]*Fine Arts Dept., Educational Science Institute, Marmara University, Istanbul, Turkey*
[3]*Educational Science Dept., Hasan Ali Yücel Faculty, Istanbul University, Istanbul, Turkey*

Abstract

This research's main was to compare the characteristics of students who are studying in different fields of the Fine Arts (painting and music) as regards their creative thinking skills, involvement in related extra-curricular activities, their families' engagement with the Fine Arts and some other demographic variables.

The population consists of the State Fine Arts High School within the province of Istanbul (N=3). The research scales were given to all students registered in those schools during the 2015-16 Academic Term. Out of these, 294 students were selected as study participants on the basis of the validity of their responses. Study data were collected using the Torrance Test of Creative Thinking (verbal and figural) and demographic information form. The test and the form were given to 156 students from the Department of Painting and another 138 students from the D epartment of Music in the Fine Arts High School.

It was found that the variables of studying in different branches of the Fine Arts and gender cause differences in the creativity of some students. Also, a positive correlation was found between students' creative thinking and their involvement in Fine Arts-related activities outside the school and playing an instrument.

1. Introduction

It is interesting that "integrated" programs, in which all types of the Fine Arts are studied, rather than just specialized fields such as science and technology, exist as one of the common factors in the countries that are most developed in the fields of economics, politics and technology.[1, 2, 11, 13, 17]

We see that both the international high school programs like international Baccalaureate and the highly industrially and technologically developed countries such as England, the USA and Japan have included the development of creative thinking within their curricula and even among the special objectives of their national education programs. [2]

It is known that developments in creative thinking can be achieved alongside cognitive developments through education and "enriching the environment". Many factors, such as culture, geography and the historical era, political events and media the student lives through enable the enrichment and full use of her/his intellectual capacity. [4, 5, 7, 8, 12, 16, 21, 22]

Torrance stated in many works he conducted about different countries that the creativity curve varied from culture to culture and that the attitude towards and need of creativity was different as well. [7]

Over- and wrong exaggeration of gender roles is among the factors affecting creativity negatively. Approval of types of behaviors that are thought to be unique to females and males and disapproval of behaviors considered to be of the opposite gender, assessments based clothes, choice of toys, type of games being played and the gender of the playmate are factors that extinguish creativity. [1]

Researchers have shown that children of higher socio-economic levels were more creative than children of lower socio-economic levels. [1] Study he/she conducted found that the scores the children received in terms of creativity showed a significant increase from a low socio-economic level to high socio-economic level. However, when the views of the families on their children's developing creativity were analyzed, it was seen that socio-economic level did not make a difference. The fact that families at a high socio-economic level have high cultural levels and more advantages is a known truth that affects the child's creativity positively [5].

Through certain attitudes and the behavior of parents, creativity can be developed or extinguished. Being insistent with the children, forcing children to stop dreaming and to be realistic, constantly comparing them with others and discouraging their curiosity all blunt creativity in children.

In a study, where the relationship between the attitudes of the family and creativity was analyzed, it was determined that 17 individuality scores from Torrance Test of Creative Thinking gained by the children with mothers with basic education levels were significantly lower than for the children with mothers

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with higher education. Parents' being overprotective was determined as an attitude preventing creativity. [10, 24]

Specific examples from studies conducted in Turkey and elsewhere relating to this matter are given below.

2. Literature Review

The research conducted in Turkey and other parts of the world are presented below:

2.1. Research in Turkey

The first study conducted in Turkey concerning creative thinking was applied to high school students by Samurçay using Meunier's creativity test in 1974-1975. In a study that included a total of 60 students, female and male students from science and literature departments underwent a creativity test. According to the research, it was seen that the creativity level of the female students from the literature group was higher than the other groups [20].

A study was conducted in a sample group of 214 people in total (N_{male}=113, N_{female}=101 female) by using a creative thinking-drawing product. The scores acquired by female and male students was compared using the t test. As a result of the study, no significant difference between the two groups was found. [13]

The creativity levels of people continuing and not continuing at a state conservatory were analyzed, and as a result no significant difference was found in terms of gender. [14]

The relation between the special talent test results acquired by students in Turkey's Education Faculties' Department of Fine Arts Education, Field of Music Education when entering the department and the scores acquired by the same students in Torrance Test of Creative Thinking (B Form) was analyzed. In a study conducted on a total of 134 people with 84 female and 60 male students from among 1st and 4th year students, no significant relation was found between creativity and musical ability. When socio-cultural data was analyzed, it was seen that creativity scores differed according to the type of school, type of instrument being played, type of music being listened to and type of music listened to by the family, type of profession of the father, residential location, mother and father's relationship status, mother's living status, employment status of working, the income level of the family, family's support of the child's ideas and following an occupational media program. [8]

The relationship between the creativity levels of the prospective music teachers and the type of high schools they graduated from was analyzed. The Torrance Test of Creative Thinking (Verbal A Form) was applied to 33 students. As a result of the research, a significant difference was found between the pre-test and post-test creativity scores of the students. [16]

N=60 people participated in another study aiming to analyze the differences of Anatolian Fine Arts High School Department of Music students' creativity levels in terms of variants such as gender, learning methods, main types of instrument and class level. The Torrance Test of Creative Thinking (Figural Form) and Kolb Learning Styles Inventory were used as data collection tools. According to the research results, significant statistical differences were observed in the fluency dimension of creativity based on class levels and gender. No statistically significant difference was observed in the total creativity scores based on learning styles and main type of instrument and in the sub-dimensions of creativity. [9]

In another study, the impact of improvisation-intensive Orff studies used in a Music course on the musical creativity process of the students was analyzed. In this experimental study, am experimental (n=21) and control group (n=21) were created among 4th year students. The scale "Thinking Creatively with Sounds and Words" developed by Khatena and Torrance was applied during the pre-test phase of the study. Later, an improvisation study was conducted with the experimental group only for 6 weeks using the Orff approach, and the control group was exempted from this study. In the post-test phase of the study, the same scale was applied to the experimental and control group, and a significant increase was observed on the musical creativity levels of the students in experimental group according to the analysis results. [14]

A study was conducted to determine whether the creativity levels of 1028 university students,(711 females and 317 males)studying in the fields of Art Education, Music Education, Class Education, Preschool Education, Physical Science Education, Social Studies Education differed in relation to various variables. Statistically significant differences were determined between the creativity test score averages of the students studying in different departments. No significant difference could be found between the creativity scores of the students based on their gender, class, age or the high school graduated from. [23]

2.2. Global Research

In a study related to the qualities different teachers see as necessary and look for in an ideal student, differentiations among the first three qualities were found in the data collected from the teachers the USA, Malaysia, China, England, India, Greece, Germany and the Philippines. In the first rank of the ideal student type for American, German and English teachers was having "a productive and creative personality". The ideal student type of the German teacher in Berlin had these personal characteristics: courageous, taking on challenging duties, independent in her/his judgment and ideas, diligent, self-reliant, sincere, not withdrawn and shy. The ideal student type

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for American teachers was thinking of others, initiating a task him/herself, diligent and sincere. The ideal student characteristics for the Filipino teachers were: undertakes a project, does not get into conflict with the authorities, does not develop new ideas or show her/his creativity [3].

As can be seen, the characteristics to be found in an ideal student differ based on the understanding of education in the countries.

There are other factors that affect creativity levels. Education levels, socio-economic status, gender etc. of the parents are among the first that come to mind.

Studies that analyze the relation between gender and creative thinking scores give different results. While creative thinking test results differ significantly between females and males for certain age groups in terms of statistics, in certain research significant differences are determined, and different results are displayed based on the sample, research design and tests being used. [4, 5, 18, 19]

A study in which the creative thinking abilities of high school students taking and not taking dancing lessons were compared was carried out with 286 students. Dance topics were included in the class for creative study in various forms by using the Torrance Test of Creative Thinking (TTCT) pre-test / post-test format. The general TTCT scores for students taking and not taking dance lessons showed significant difference. Significant difference was found among the individuality and abstractness headings in the TTCT sub-scale scores of the students taking dance lessons. [15]

The general artistic and scientific similarities and differences among the university students studying in the departments of engineering and music were analyzed. It was stated in the results that while there was a significant difference between musicians and engineers in terms of scientific creativity, musicians received higher scores in general and artistic creativity. There was no significant difference among genders in terms of general scientific or artistic creativity. Significant differences were found in terms of general artistic and scientific creativity in regard to the age groups. When students of the department of music were compared to engineers, they had a tendency to high scores both in general and artistic creativity. According to the general data, while there was no scientific creativity when the scientists were compared to the artists, the artists had the tendency to have high levels of general and artistic creativity. [10].

The research's main aim was to compare the characteristics of students who are studying in different fields of the Fine Arts (painting and music) as regards their creative thinking skills, involvement in their respective extra-curricular activities, their families' engagement in fine arts and some other demographic variables. In the scope of the study's sub-problems, students attending the music and painting departments of the Fine Arts High School were examined to see whether there was a difference between

- Their scores obtained from creativity,
- Their involvement in music-related activities outside the school and creativity scores,
- The educational status of families and their creativity scores,
- The monthly income status of families and their creativity scores, and
- Whether gender causes significant difference in the creativity scores.

3. Methodology

The population consisted of students in the State Fine Arts High school within the province of Istanbul (N=3). Research scales were given to all students registered in those schools during the 2015-16 Academic Year. Out of these, 294 students were selected as study participants on the basis of the validity of their responses. Study data were collected by using the Torrance Test of Creative Thinking (verbal and figural) and demographic information form. The test and the form were given to 156 students from painting departments and another 138 students from the music department in the Fine Arts High Schools.

During data analysis, the normality distribution of the groups was investigated with the Shapiro Wilk's method. Since they did not show normal distribution, Mann Whitney U and Kruskal Wallis-H methods were used to compare the creative thinking scores of the students. Creative thinking performance levels were examined in relation to 21 different types of scores.

4. Analysis of Findings

4.1. Comparison of the creativity levels of students

Among the Verbal Fluency scores (z= -1.967 $p<0.05$) – one of the Verbal score types – of painting and music students, a statistically significant difference was found in favor of the Department of Painting (X_{music}=33.22 $X_{painting}$= 35.56). Among the Verbal Flexibility scores (z= -2.816 p<0, 05), a statistically significant difference was also found in favor of the Department of Painting (X_{music}=21.11 $X_{painting}$= 19.24).

No statistically significant difference was found among the Verbal Originality specialty scores of the students studying in the Fine Arts High School (z= -0, 969 p>.05) and among the total scores for Verbal Creativity (z= -1.885 p>.05).

A statistically significant difference was found among the Abstractness of Titles scores of the students in the different departments (z=-4.388 $p<0.001$) in

favor of the students studying in the Department of painting (X_{music}= 6.94 $X_{painting}$= 4.43); among Enrichment scores (z= -3,528 p<0,.001) in favor of the students in the Department of Painting (X_{music}= 10,45 $X_{painting}$=9,34); among (z= -6,941 p<0,001) again in favor of the students in the Department of Painting (X_{music}=4,01 $X_{painting}$=1,73).

No significance differences were found between the Figural Fluency (z= -1,059 p>.05) and Figural Originality (z= -0, 59 p>.05) scores, as indicators of the Figural Creativity of students in the different departments.

A statistically significant difference was found among the Emotional Expressiveness scores as part of Figural Creativity scores of students in the different departments of the Fine Arts High School (z= -4.178 p<0.001) in favor of students studying in the Department of Painting (X_{music}=0.38 $X_{painting}$=0.85); among Storytelling Articulateness scores (z= -4.764 p<0.001) in favor of students in the Department of Painting (X_{music}=1.88 $X_{painting}$=3.06); among Movement or Action scores (z= -3.836 p<0.001) in favor of students in the Department of Painting (X_{music}=0.86 $X_{painting}$=1.46); among Unusual Visualization scores (z= -4.909 p<0.001) in favor of students in the Department of Painting (X_{music}=0.9 $X_{painting}$=1.69); among Internal Visualization scores (z= -2.192 p<0,05) in favor of students in the Department of Painting (X_{music}=0.52 $X_{painting}$=0.74); among Extending or Breaking Boundaries scores (z= -6.585 p<0.001) in favor of students in the Department of Painting (X_{music}=1.36 $X_{painting}$= 2.99); among Humor scores (z= -4.593 p<0.001) in favor of students in the Department of Painting; among Richness of Imagery scores (z= -4.837 p<0.001) in favor of students in the Department of Painting (X_{music}=0.98 $X_{painting}$=1.78); among Colorfulness of Imagery scores (z= -5.828 p<0.001) in favor of students in the Department of Painting (X_{music}=0.33 $X_{painting}$=0.97) and among Fantasy scores (z= -4.134 p<0.001) in favor of students in the Department of Painting (X_{music}=0.35 $X_{painting}$= 2.17).

No significant difference was found among the scores of specializing students for the scores for types of Expressiveness of Titles (z=-0.189 p>.05), Synthesis of Incomplete Figures (z=-1.063 p>.05), and Synthesis of Incomplete Lines (z=-0.092 p>.05).

4.2. Comparison of students participating in extracurricular activities relating to music and their creativity scores

No significant difference was found among the verbal creativity scores of the students in the Fine Arts High School based on whether they participated in activities relating to music in their free time.

However, with regard to their creativity scores, a statistically significant difference was determined among the Resistance to Premature Closure (z=-2.631 p<0.05) (RPC) in favor of those not participating inparticipating in these activities (Xyes==2.61 Xno=3.55).

The Resistance to Premature Closure score indicates the individual's work towards perfecting a unique thought s/he has put forth. This score type was the lowest score type the Turkish children received during the work adapting it to Turkish.[5] It is possible to see this as result of the reliance of our education system in testing and rewarding only correct answers to the questions posed in the shortest time. This result can be interpreted as showing that although the students follow artistic activities in their free time this does not affect their resistance to premature closure score type.

A statistically significant difference (Xyes=1.1 Xno=1.31) was found in favor of the students who did not participate in free time activities involving music (z= -2, 13 p<0, 05) in terms of the Movement or Action score type.

It is understood from the Fine Arts students that the participants in artistic activities were not able to develop sufficient and cold not transfer this into their creative thinking skills.

A statistically significant difference was found among the students studying fine arts on behalf of the participants (Xyes=7,19 Xno=6,27) in terms of Expressiveness of Titles (z= -2,399 p<0,05) of those who did or did not participate in free time music activities.

The Expressiveness of Titles score type belongs to the Figural Creativity test and it means the act of giving a title to paintings for the purpose of adding abstract or philosophical meaning. To acquire high scores for this score type, the student must have abstract thinking skills, culturally rich knowledge and be able to think philosophically and creatively. These students are thought to partially have and use a basic critical thinking ability. Moreover, they are thought to be able to interpret events and facts philosophically.

A statistically significant difference was found among the Extending or Breaking Boundaries score averages of students (z= -2.309 p<0.05) participating or not participating in activities in their free time in favor of non-participants (Xyes=2.01 Xno=2.61).

The Extending or Breaking Boundaries score type is a score type that again belongs to the figural creativity test. It defines how much the person taking the test questions the given rules, or her/his courage not to take the rules into consideration if they are an obstacle against creative thinking and creating unique thought. It symbolizes that people thinking creatively re-consider the rules given during assigned tasks and the use opportunities and are flexible enough to be able to think differently. According to this result, it can be interpreted that the people participating in music activities outside school are able to extend or break the boundaries of directives and requests.

It was determined that, among the Colorfulness of Imagery scores of participants and non-participants in

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free time activities related to music (z= -2.392 p<0.05), a statistically significant difference was found in favor of non-participants (Xyes=0.58 Xno=0.83).

It was also found that, among the Fantasy scores of participants and non-participants in free time activities involving music (z= -2.094 p<0.05) a statistically significant difference (p<.05) was found in favor of non-participants (Xyes=0.51 Xno=2.81).

The Fantasy score is a score type in the figural creativity test involving creating a new product from material given to the test taker and is related to the creation of unusual ideas. As is known, one of the most important characteristics of creative thinkers is to have the habit of book reading and research and to create new syntheses and products using symbols derived from different cultures.

4.3. Analysis of the relation between students' creativity scores and families' educational status

No statistically significant difference was found between the creativity scores of the students studying in different departments of the Fine Arts High School with regard to their families' educational status.

4.4. Analysis of the relation between students' creativity scores and monthly familial income

There was a statistically significant difference (p<0.05) with regard to the monthly familial income of the students studying Fine Arts in terms of the Verbal Originality score (H=9.112 p<0,05). The Verbal Originality score of the students of Fine Arts with a monthly familial income between 1000-1500 TL (X=14.13) and 1500-2000 TL (X=14.31) was significantly different in favor of the higher income level compared to those with families with a monthly income of 2000 TL and above (X=16.9).

A statistically significant difference was also found among the monthly familial income levels of the students studying Fine Arts in terms of the Verbal Total scores (H=9.363 p<0.05). The Verbal Total Score of the students studying Fine Arts whose families had a monthly income of 1500-2000 TL (X=58.76) was significantly different in favor of the higher income level when compared to the students from families with monthly income of 2000 TL and above (X=66.54).

Additionally, a statistically significant difference was determined between the monthly familial income levels of the students studying Fine Arts in terms of Abstractness of Titles (H=7,895 p<0,05). The Abstractness of Titles score of the students studying Fine Arts with monthly income of 1000-1500 (X=4.7) TL was significantly different in favor of the higher income level when compared to the students whose families had a monthly income of 2000 TL and above (X=6.2).

There was a statistically significant difference between the monthly familial income levels of the students studying Fine Arts in terms of Resistance to Premature Closure (H=9.124 p<0.05). The RPC score of the students studying Fine Arts with monthly familial income of 1000-1500 (X=2.34) TL was significantly different in favor of the higher income level when compared to the students whose families had a monthly income of 2000 TL and above (X=2.7).

A statistically significant difference was also determined between the monthly familial income levels of the students studying Fine Arts in terms of Storytelling Articulateness (H=9.397 p<0.05). The Storytelling Articulateness score of the students studying Fine Arts with monthly income of 1000-1500 (X=1.98) TL was significantly different in favor of the higher income level when compared to the students whose families had a monthly income of 2000 TL and above (X=2.73).

Finally, a statistically significant difference emerged between the monthly familial income levels of the students studying Fine Arts in terms of Movement or Action (H=9.362 p<0.05). The Movement or Action score of the students studying Fine Arts in families with a monthly income of 1000-1500 (X=0.99) TL was significantly different in favor of the higher income level when compared to the students with monthly familial incomes of 2000 TL and above (X=1.37).

4.5. Comparison of students' creativity scores and gender

A statistically significant difference was found between the genders (z= -3,473 p<0.001) in terms of Verbal Fluency score. The Verbal fluency score of the students was significantly different in favor of the females (Xfemales=36.53).

There was also a statistically significant difference was between the genders (z= -3.322 p<0.001) in terms of Verbal Flexibility score. The Verbal Flexibility score of the students was significantly different in favor of the females; (Xmales=18.89), (Xfemales=21.19).

In addition, a statistically significant difference was seen between the genders (z= -3.871 p<0.001) in terms of Verbal Originality score. The Verbal Originality score of the students was significantly different in favor of the females; (Xmales=13.3), (Xfemales=17.16).

A statistically significant difference was also found between the genders (z= -3.983 p<0.001) in terms of Verbal Total Score. The Verbal Total Score of the students was significantly different in favor of the females (Xmales=56.59), (Xfemales=67.73).

There was a statistically significant difference between the genders (z= -3.555 p<0.001) in terms of

Figural Originality score. The Figural Originality score of the students was significantly different in favor of the females; (Xmales=5.23), (Xfemales=6.67).

A statistically significant difference was also found between the genders (z= -3.032 p<0.001) in terms of Abstractness of Titles score. The Abstractness of Titles score of the students was significantly different in favor of the females; (Xmales=4.9), (Xfemales=6.38).

There was, additionally, a statistically significant difference between the genders (z= -2.899 p<0.001) in terms of Enrichment score. The Enrichment score of the students was significantly different in favor of the females; (Xmales=9.36), (Xfemales=10.33).

A statistically significant difference was noted between the genders (z= -3,768 p<0,001) in terms of Storytelling Articulateness score. The Storytelling Articulateness score of the students was significantly different in favor of the females; (Xmales=1.95), (Xfemales=2.9).

There was a statistically significant difference between the genders (z= -3.192 p<0.001) in terms of Movement or Action score. The Movement or Action score of the students was significantly different (Xmales=0.91) in favor of the females (Xfemales=1.37).

A statistically significant difference emerged between the genders (z= -3.603 p<0.001) in terms of Expressiveness of Titles score. The Expressiveness of Titles score of the students was significantly different in favor of the females; (Xfemales=7.43), (Xmales=6.07) There was a statistically significant difference between the genders (z= -3.481 p<0.001) in terms of Internal Visualization score. The score of the students was significantly different in favor of the females; (Xmales=0.4), (Xfemales=0.81).

A statistically significant difference was also determined between the genders (z= -3.209 p<0.001) in terms of the Humor score. Score of the students was significantly different in favor of the females; (Xmales=1.09), (Xfemales=1.46).

Finally, there was a statistically significant difference between the genders (z= -3,731 p<0,001) in terms of Figural Total score. The Figural Total score of the students was significantly different in favor of the females; (Xmales=15.47), (Xfemales=22.14).

5. Discussion

While a statistically significant difference emerged between Verbal Fluency and Verbal Flexibility scores which belong to the Verbal Creativity score types.

As a result of the creativity tests applied to students in the Music and Painting Departments of the Fine Arts High School, no statistically significant difference was found among the Verbal Originality scores.

A statistically significant difference was found on behalf of the students studying painting with regard to the scores for Abstractness of Titles, Enrichment, Resistance to Premature Closure, Emotional Expressiveness, Storytelling Articulateness, Movement or Action, Unusual Visualization, Internal Visualization, Extending or Breaking Boundaries, Humor, Richness of Imagery, Colorfulness of Imagery and Fantasy scores as part of Figural Creativity point types. However, no significant difference was found among the scores of specializing students for the score types Expressiveness of Titles, Synthesis of Incomplete Figures and Synthesis of Incomplete Lines.

No significant difference was found when comparing students who participated in activities relating to music outside their school time with those who did not in terms of their Verbal Creativity scores.

However, with regard to their Figural Creativity scores, significant differences were found in favor of the non-participants in the score types of Resistance to Premature Closure, Movement or Action, Extending or Breaking Boundaries, Colorfulness of Imagery and Fantasy. This finding can be interpreted as showing that students were not able to make the expected gains from activities relating to music in their free time and were not able to use the benefits acquired from these cultural activities to develop their creative thinking abilities.

In terms of Verbal Originality score, there was a statistically significant difference to the benefit of students with a higher monthly familial income and in regard to their participation in extra-curricular activities involving music. A statistically significant difference was determined between the Abstractness of Titles, Storytelling Articulateness and Movement or Action scores within the Figural Creativity scores in favor of a higher income level.

There was a statistically significant difference between the genders of the students studying Fine Arts in favor of the females in terms of Verbal Fluency, Verbal Flexibility and Verbal Total score.

Among the students studying Fine Arts, a statistically significant difference was found between the genders, also in favor of the females, in the Abstractness of Titles, Enrichment, Storytelling Expressiveness, Movement or Action, Expressiveness of Titles, Internal Visualization, Humor and Figural Total scores in terms of Figural Originality scores and standard scores.

6. Conclusion

It was found in this study that students of the Department of Painting within the Fine Arts High School had more advanced levels of verbal and figural creativity than the students in the Department of Music.

7. Acknowledgment

We would like to acknowledge the support provided by Marmara University, Scientific Research Commission for this presentation, (research project

with the number EGT-D-070317- 0140), during the Ireland International Conference on Education (IICE-2017).

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