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# The Relationships between Secondary School Students' Visual Creativities in Art and their Attitudes towards Graphic Design

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## Abstract

The aim of this study is to examine the relationship between secondary school students' visual creativity in art and their attitudes towards graphic design. The relational research model, one of the quantitative research designs, was used in the study. Two different data collection tools were used to obtain data. In the study, "visual creativity scale in art" and "attitude scale towards graphic design" were used to examine the relationship between the two variables. The study group consists of 248 students studying Visual Arts in the 5th, 6th, 7th and 8th grades. The data obtained in the study are presented in line with the research problem. When the findings were examined, it was seen that secondary school students' visual creativity in art and their attitudes towards graphic design were at a moderate level. While the participants' visual creativity in art and their attitudes towards graphic design did not differ according to gender and school type, significant differences were found according to grade level. On the other hand, it was determined that there was a positive, high-level relationship between the visual creativity of secondary school students in art and their attitudes towards graphic design, and this relationship was at a significant level. In order to determine the predictive level of this relationship, a regression analysis was performed by assigning visual creativity in art as an independent variable and attitudes towards graphic design as the dependent variable. As a result, it was found that the level of visual creativity in art significantly predicted attitudes towards graphic design.

## Introduction

With the Visual Arts course, it is aimed that the child gains knowledge about fine arts, develops artistic creativity and transfers it to every field, expresses himself through art, and gains an aesthetic personality that will enable him to beautify his environment (Türkkan, 2008). New trends in art education emphasize that art should be taught in multiple ways. For this reason, dimensions such as developing visual perception, understanding a work of art with all its dimensions, assimilation of the cultural and historical dimension of the work of art and the creative side of art gain importance (Kara, 2020; Ozturk & Ozturk, 2022: Smilan, 2016; Yağışan, Sünbül & Yücalan, 2007). It is the school's responsibility to ensure the creative and artistic development of all children, regardless of ability. "When this development is neglected, artistic talents die or disappear" (Johnson, 1965). For this reason,

in the visual arts lesson, the teacher should have the knowledge and skills to enable students to acquire the content and achievements of the unit by using all kinds of tools and activities that have educational value according to the possibilities of the school and the environment. In addition, it should have the capacity to reveal the creativity of the students and provide the opportunity to use the artistic method, together with contemporary teaching methods and techniques, and to benefit from sufficient resources, equipment, museum and art gallery trips-observation, research, examination, projects and practices. Considering that secondary school children's imagination is one of the most developed periods, the importance of developing their visual creativity in art, supporting their attitudes towards graphic design and supporting their imagination in visual arts will emerge once again. The higher the creativity level of the students in the field of visual arts and the positive affective tendencies towards this field, the more competent the students can be in using their imaginations (Dziedziewicz & Karwowski, 2015; Rostan, 2005).

Graphic design is the process of creating visual content that helps communicate messages with a target audience. Visual communication art is very important especially for individuals, organizations or entities that want to connect with their target audience, and graphic design is the perfect solution in such cases. Graphic design is important for many reasons. The first is the foundation of every logo design you've ever seen. Second, all the social media content and ads you see every day are graphic design products. It is also part of graphic design, book cover design, magazine page layouts, product design, clothing design, and more (Drucker, 2014; Wileman, 1993). Graphic design is the practice of creating and editing the visual elements of a project. Designing the layout for a magazine, creating a poster for a theatrical performance, and designing packaging for a product are all examples of graphic design. In fact, almost everyone today practices some form of graphic design in their daily life – whether it's adding text to an image for social media or color-coding a spreadsheet for business, all graphic design-based processes are at work. Currently, in the era of ubiquitous visual transmission, our views or thoughts are often filled with various graphics. Graphic disseminates information all over the world and becomes a language of expression without national borders (Holsanova, Holmberg & Holmqvist, 2019; Hu, 2022; Zhao, 2020).

The purpose of graphic design is to convey or enhance a message (Bichler & Beier, 2016; Walker, 2017). Graphic design is the art or profession of visual communication that combines images, words and ideas to convey information to an audience, especially to create a certain effect (Tian, Lonsdale & Cheung, 2019). In other words, graphic design is communication design; It is a way to convey ideas through visuals and design. Graphic design is a human-centered discipline with high perceptual quality, which is of great importance for rapid communication between people and societies. Good graphic art facilitates communication. Well-executed graphic design can also get an emotional response from the audience and even motivate them to take action. For example, the "sign up" page on a website is often designed to entice visitors to join an email list or start a free trial (Kindel, 2017; Weber, 2017).

Competencies in graphic design can give individuals the opportunity to work in a variety of jobs. Graphic design graduates can find employment in advertising agencies, graphic design workshops, the press and publishing industry, academic staff in fine arts education and research programs of universities, art consultants and graphic designers in public and semi-public institutions, and create their own workplaces (Pflaeging & Stöckl, 2021). As

in every field, being successful in the design process will be in the form of expressing oneself in a free environment. Therefore, in Visual Arts Design, if the student is in emotional interaction, aesthetic values are at the forefront, and can express their views and ideas in flexible environments, they will be more creative (Tomita, 2017).

Graphic design is a kind of modeling activity that can convey information and emotionality to the target audience as a carrier through visual media. Graphic design has three basic features: informative, artistic and economic. Its informative usage is the most important function of graphic design, because what is important in graphic design is the combination of symbols, colors and text elements and the message given by considering the aesthetic appearance of the font, drawing or photograph according to the needs of the audience. For this reason, graphic design can be explained as "the language of visual art and the form of communication between the sender and the receiver in the information transfer process" (Du & Yu, 2012:480).

Graphic design is carried out with experimental and analytical methods in a multi-communication environment. The designer, who arranges the visual elements harmoniously by following the design principles, brings the form and content together in the designed product (Erkan, 2013: 1050). The design process consists of observation, research, association, creativity, application and conclusion steps. The features of being critical, innovative, creative and forward-looking have developed in graphic designers. The most important step of this process is creativity, because creativity is the ability to relate visual elements and concepts that have never been used before, or the ability to solve the problem in communication (Tunçkan, 2012:149). While the designer is promoting the product or service he/she thinks in his/her imagination, he/she should choose the appropriate method and construct it, but no matter how correct the method is, if the target audience does not understand, the message cannot reach its target. The ability to make sense of design, when viewed by both the target audience and the designer, has to depend on cultural accumulation, experiential knowledge, use of information, and the ability to see and interpret well. For this reason, it is seen that designers attach importance to common cultural values, history and language in the methods they use (Deveci & Bulut, 2016:87).

If the designer is in a position to evaluate the necessary information he has collected by doing research, he can produce creative ideas and develop his imagination. It is not possible to create good works without imagination in creativity, which is considered the most important stage of design (İncearık, 2015, Öztürk, 2017). A creative person acts with the perceptions and intuitions he has accumulated in order to obtain a different form by visualizing his work, and seeks a new and unusual solution (Parlak, 2014:111). Creative director Ron Hoff suggests that there are four characteristics of creative people. Creative people are good observers who push the possibilities. They want to see the world they create by influencing the target audience. They approach the objects they describe in an unusual way from a different perspective than other people (Becer, 2015:48). Creativity, which is learned and can be developed, is based on facts and experiments. Creative thinking is revealed by using all the information. In this direction, information can be reproduced and creativity can be increased and developed (Susuz, Türe, & Öztürk, 2020; Parlak, 2014).

Design produces solutions for the channels that change people's worldview. This situation provides new opportunities in the creative field and creates tools for design (Deveci and Bulut, 2016: 88). Designing something starts in the mind. It goes through a creative process such as reasoning, questioning, producing original content, critical thinking and analysis. Creative process with the inclusion of visual and linguistic expression in the design; It requires the use of complex, intense and high-level mental skills (Özmutlu, 2017).

The visual arts have traditionally been treated as an important area of creative activity and have been the subject of some of the first experimental creativity studies, such as Patrick's seminal studies (Botella et al., 2013). Creativity, defined as the ability to generate new and adapted ideas for a situation (Lubart, 2001), is traditionally represented by four components: person, process, press and product (Runco, 1997, Plucker & Runco, 1999). Creativity is the ability to create original, appropriate and at the same time useful ideas or products and is one of the most important life skills (Runco & Jaeger, 2012; Shelley, Chiang, & Ozturk, 2021: Stein, 1983; Sünbül, 2000). In addition, creativity has an important role in solving daily problems and tasks (Csizmadia et al., 2021). Creative thinking is a vital cognitive ability for human effort, evolution and cultural transformation (Gabora and Kaufman 2010). Scientists generally agree that creativity leads to new (original) and meaningful (useful, relevant) ideas and products (Runco ve Jaeger, 2012; Sünbül, 2005).

Creative idea generation is critical to the generation of new and useful ideas (Runco & Jaeger, 2012), the advancement of scientific and technological innovation, and artistic, musical, and literary endeavors (e.g. Dietrich & Kanso, 2010; Fink et al., 2009; Jung, 2014; Küçüktığlı, 2022; Sünbül, 2002). Visual creativity refers to the production of new and useful mental visual images such as sketches, pictures that can lead to the production of new and useful visual forms (Aziz-Zadeh, Liew & Dandekar, 2013; Runco & Jaeger, 2012). According to Runco and Jaeger's (2012) standard definition of creativity, “useful” refers to outputs that are effective or valuable according to task demands – so this definition may encompass tasks that emphasize the functionality, aesthetics, or originality of solutions.

Regarding the person, the multivariate approach to creativity identifies four main components of interest: cognitive, positive, emotional and environmental factors (Akdogan, 2021; Jackowicz & Ozturk, 2021: Lubart et al, 2015). Special attention was also paid here to the creative process as an activity or a form of action. For example, Getzels and Csikszentmihalyi (1976), who observed the artistic creative process, described a problem-posing phase (pre-drawing activity) and a problem-solving phase (drawing and feedback activities). Various moments or stages of the creative process have been explored using a variety of theoretical frameworks and methodologies, and the research presented in this report adds to this growing body of work.

The profile of creative people, especially artists, has been extensively studied (Batey & Funham, 2006). However, in the past, the cognitive, emotional, emotional and environmental characteristics of creators were mainly studied separately. According to the multivariate approach, the creative person is defined by a combination of cognitive, positive and emotional components associated with favorable environmental conditions (Amabile, 1996). In addition to the multivariate approach to the creative person, the focus on the creative process refers to the study of "the sequence of thoughts and actions that give rise to original and adapted ideas" (Lubart et al, 2015). In this

context, the creative process refers to the application of one's creative ability to a type of creative production. The creativity impulse in children can be developed by letting them know that there can be more than one way to solve the problems they encounter, to think differently without being bound by certain patterns, and to put the thought into practice. Therefore, they need to be involved in activities where they can show their creativity frequently. The urge for creativity can be activated in every lesson. However, it provides a broader thinking opportunity in art education classes. "Developing creativity with art activities helps the development of all intellectual areas in the child" (Kırışoğlu, 2002).

The activity of the visual imagination encompasses the creation, interpretation and transformation of vivid mental representations (Thompson et al., 2011). However, the belief that creative imagination is one of the major human abilities that contributes to the effective use of creative potential (Runco et al., 1998) is not just a matter of recent years. The first documented study of imagination was done among scientists about a century and a half ago, and with the development of research on creativity testing tools, tools for measuring visual creative imagination were created (Jankowska & Karwowski, 2015; Jankowska & Karwowski, 2015).

Visual creativity is the ability to produce useful and new products in visual forms that are very useful in the fields of drawing, photography, sculpture and architecture (Aziz-Zadeh et al., 2013). Visual creativity, which is a very complex cognitive function, includes multiple processes such as generating ideas through spontaneous thinking and evaluating ideas to control whether a new association can be realized (Pidgeon et al., 2016; Kleinmintz et al., 2019). Creativity in graphic design can be summarized as the ability to establish relationships between visual elements and concepts that have no relation to each other. The designer reflects his design by using images that everyone can encounter in the message he will convey, and the objects can be added to the meaning as a fictional element in the design. The audience is also affected by the way the message is conveyed rather than the level of meaning (Kaptan ve Sayın, 2020).

In design, visual creativity is a key component in producing mental images and sketches of new and functional products (Fish & Scrivener, 1990; Pidgeon et al., 2016). Therefore, in an artistic context, visual creativity has significant cultural characteristics while emphasizing the aesthetics of visual creative solutions (Damasio, 2001; Hartono & Ozturk, 2022; Palmiero, 2015). Despite this distinction, creative visual imagery is generally considered to be a component process of creative thinking, including non-visual creativity (Abraham, 20134; Abraham and Windmann, 2007; Finke, 2014).

Despite the contribution of visual creativity to innovation in many fields, the underlying cognitive and mental processes have not been fully defined. Understanding these processes will positively affect future studies evaluating the training of appropriate cognitive skills or processes associated with successful visual creativity (Gruzelier, 2014). This is particularly important in societies where visual creativity has professional, social or entertainment value (Pidgeon et al., 2016; Dimovski & Puškarević, 2017). The importance of art in the integrity of design education can be shaped as teaching thinking, personality development and opening the way for creativity. The fact that the educator also supports the creative powers with affective interaction behaviors strengthens the self-confidence of the student (Kanat, 2019; Thompson, 2015). In Visual Arts Education, he can

express himself more freely by using the general laws and techniques of the arts, and in this process, he can use the design language in line with aesthetic principles, such as perception, learning, thinking, designing, synthesizing, establishing the link between relationships, interpreting, looking critically. Bateman, 2014).
In this context, visual arts design has a scope that develops creativity and aesthetic sensitivity with affective interaction, gains the ability to recognize, understand and evaluate art, and supports the artistic development of people and the cultural life of the society (Dyjur, & Li, 2015; Tomita, 2018). According to another definition, artistic creativity does not focus solely on problem solving like creativity in other fields, but rather on creative performance as an art product (Maitland, 1976). The creative process in question is not a phenomenon represented by the work of art, on the contrary, it acts as a tool in the incarnation of creative performance. According to Maitland, we would not be wrong if we say that the process is more important than the product itself in order to talk about artistic creativity in this process where the work of art is seen as a tool. A creative process is needed for the emergence of an artistically creative product. Although the creative process and product sometimes give rise to a start as a result of subconscious or random encounters, it is clear that many reasons play a role both positively and negatively in the formation of this process and product.

It is likely to observe and evaluate the pedagogical dimension of human artistic development as well as the social dimension, subjective concentrations that are active especially in childhood and primary and secondary school processes. As a student, the child's artistic potential needs to be determined by simple skills and efforts that can often be explained by methodological confusion under the name of creativity or creative performance must be overcome. One of the child's two life spaces is his home and environment, and the other is the school and its environment (Amabile, 1982; Karwowski, 2014). For this reason, the center of art and creativity determinations, orientations and evaluations is naturally school. Therefore, it can be said that the school is the place that nurtures the possibilities of revealing creative talents. On the other hand, it can be mentioned that there is a cultural and technological preoccupation that surrounds the child and attracts attention with its distractors. In such an environment, there may be children with stressful, unprotected, anxious and suspicious personality traits. There may also be children with techno-skills who may be freer, enthusiastic, and spontaneously displaying performance-related creativity tricks. Therefore, it should be considered important to reveal the creativity of the child in environments of visual, cultural and environmental influence and to be able to make the indicators of creativity development as a pedagogical justification (Chan & Zhao, 2010; Kaufman & Baer, 2012; Tütüncü, 2006; Ulger, 2015). A visual arts education that deals with the development processes of creativity in children, not only with visual/pictorial expression or expression studies, but also with the cognitive focus of ideas, imagination, fiction and discoveries, the creation, classification and approval of curriculum structures can be considered important. The achievements in the visual arts course are very important for the development of the artistic creativity of the students and the development of their positive attitudes. In this sense, it is important to reveal the variables that affect students' visual creativity in art and their attitudes towards graphic design. In this context, it is aimed to examine secondary school students' levels of visual creativity in art and their attitudes towards graphic design with a relational approach. For this purpose, answers to the following questions were sought:

1. What are the secondary school students' levels of visual creativity in art and their attitudes towards graphic design?
2. Do secondary school students' levels of visual creativity in art and their attitudes towards graphic design differ significantly by gender?
3. Do secondary school students' levels of visual creativity in art and their attitudes towards graphic design differ significantly according to school type?
4. Do secondary school students' levels of visual creativity in art and their attitudes towards graphic design differ significantly by grade?
5. Does the visual creativity of secondary school students significantly affect their attitudes towards graphic design?

## Method

In this study, in accordance with the quantitative research paradigm, the attitudes and visual creativity of secondary school students towards graphic design were investigated with the relational scanning model, one of the general scanning models. The survey model is a research approach that aims to describe and describe a past or present situation as it is. In this model, there is no effort to change or influence whatever is the subject of the research. What you want to know is in the square. The goal is to accurately observe and identify that thing. The main purpose is to observe without trying to change. The method used is the relational research model, one of the quantitative research designs. This model serves to examine the existence of covariance between two variables (Fraenkel, Wallen, & Hyun, 2012). In this study, the relational research model was preferred since the relationship between the visual creativity of the participants in art and their attitude towards graphic design was examined.

### The Scope and Sample Group of the Study

The scope of this study consists of students studying in secondary schools in Turkey. The sample consisted of 243 students who were selected by convenience sampling who could represent this population. The convenience sampling method is used to select the sample that will represent the universe and the sample that the researcher can reach in line with his possibilities (Fraenkel et al., 2012). In this study, the researcher carried out the study in schools that he could access in terms of time, transportation and financial cost. For this reason, convenience sampling method was used in the study. Secondary school students in the research sample consisted of schools in Mersin, Konya and Ankara. The distribution of the research sample is shown in Table 1.

Table 1 shows the distribution of secondary school students in the research group by gender, school type and class variables. According to the analyses, 127 of the participants in the research group were male (51.21%), and 121 were female (48.79%). Of the students, 118 (47.58%) study in private schools, and 130 (52.42%) in public schools. Considering the grade levels of the participants in the research group, 66 (26.61%) are in the 5th grade, 66 (26.61) are in the sixth grade, 63 (25.40%) are in the seventh grade and 53 (21.37%) are in the eighth grade. It is seen that the secondary school students within the scope of the research show a balanced distribution in terms of gender, school type and grade levels.

Table 1. Distribution of Research Sample by Gender, Faculty, Title and Professional Seniority

| Gender | n | % |
|---|---|---|
| Male | 121 | 48.79% |
| Female | 127 | 51.21% |
| Total | 248 | 100 |
| School Type | | |
| Private | 118 | 47.58% |
| Public | 130 | 52.42% |
| Grade | | |
| 1 | 66 | 26.61% |
| 2 | 66 | 26.61% |
| 3 | 63 | 25.40% |
| 4 | 53 | 21.37% |

**Data Collection Tools**

*Attitude Scale towards Graphic Design*

It is a scale developed by the researcher to determine the suitability of the attitude scale towards graphic design. In the preparation of the scale, attitude items towards graphic design were formed based on the opinions of 3 experts from Visual Arts, Communication Sciences and Educational Sciences and the literature. For this purpose, 10 items were determined. The validity and reliability analyses of the attitude scale towards graphic design, scored in a 5-point Likert-type form, were conducted on a sample of 221 people. The participants in the sample consist of students studying at the secondary school level.

Exploratory Factor Analysis technique was used to test the validity of the attitude scale towards graphic design. The values of 0.909 in the KMO test performed before the analysis and 796.61 ($P<0.01$) in the Bartlett Test were obtained. These findings show that the sample applied for the development of the SND visual design criteria scale is sufficient and consistent with the structure of the scale. The result of the factor analyzes carried out shows that 10 SND visual design criteria are collected in a single dimension. A single dimension explains approximately 56.7% of the variance in the visual design features that the scale aims to measure. This value is quite high in terms of validity. The Scree Plot graphic created below for the visual design criteria is another indication that the scale is one-dimensional (see Figure 1).

The item loads collected in a single factor for each item of the scale are above 0.509. In the literature, it is stated that factor loads ranging from 0.30 to 0.40 can be taken as the lower cut-off point in the creation of the factor pattern (Neale & Liebert, 1980). In this respect, it can be said that the factor load of each item is quite high. Item-Total correlation coefficients were also calculated on each item of the attitude scale towards graphic design. The correlation values calculated for each item are above 0.41 (see Table 2). In the literature, it is recommended that the Item-Total correlation coefficient should be at least 0.30 for a good item. The high values obtained in this scale show that each item of the scale measures the characteristic to be measured in a distinctive way.

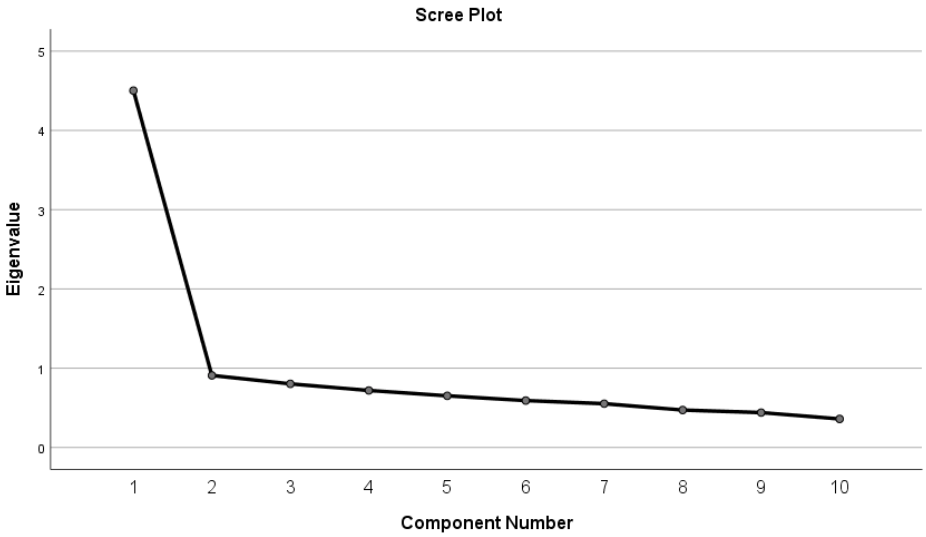


Figure 1. Scree Plot Graph

Table 2. Item Analysis Results of Attitudes towards Graphic Design Scale

| Items of the Scale | Factor Load | Item-Total Correlation |
|---|---|---|
| Item 1 | .666 | .669 |
| Item 2 | .707 | .612 |
| Item 3 | .753 | .664 |
| Item 4 | .580 | .637 |
| Item 5 | .681 | .582 |
| Item 6 | .651 | .556 |
| Item 7 | .759 | .564 |
| Item 8 | .632 | .534 |
| Item 9 | .732 | .483 |
| Item 10 | .509 | .417 |

In testing the reliability of the attitude scale towards graphic design, the Cronbach Alpha coefficient was calculated. The reliability coefficient of the 10-item scale was found to be 0.86. It is suggested that coefficients of 0.70 are sufficient in reliability studies on five-point rating scales (Cronbach, 1990). The calculated coefficient shows that the scale has a high reliability.

*Visual Creativity in Art Scale*

This measurement tool, which measures the Visual Creativity in Art level of secondary school students, was developed by Akca and Kavak (2021). The scale is 5-point Likert type. In accordance with the purpose of the research, the factor structure of the Visual Creativity Determination in Art scale was first examined by exploratory and confirmatory factor analysis. The Kaiser-Meyer-Olkin (KMO) coefficient of the Visual Creativity Determination in Art scale was calculated and the Barlett Sphericity test was applied. The results showed that the sample size was sufficient and the scale data were suitable for factor analysis (KMO= 0.98; Barlett Sphericity ($\chi$2

(210)) = 13463.96; p<0.001). As a result of factor analysis, it was found that the scale had a single factor structure. The factor loads of the items in the scale ranged from 0.83 to 0.95.

The reliability of the Scale for Determining Visual Creativity in Art was examined by calculating the Cronbach Alpha coefficients. The alpha coefficient calculated for the Scale of Determining Visual Creativity in Art is 0.95. The coefficient obtained indicated that the reliability of the scale based on internal consistency was high. Evidence for the construct validity and reliability of the 'Visual Creativity' scale, which was developed to measure the levels of 'Visual Creativity in Art', was obtained. Based on these findings, the content validity of the scale was proven to have one-dimensional and high construct validity with confirmatory and exploratory factor analyses. As a result, the 'Scale of Visual Creativity in Art' is a scale developed in a cultural context with its content based on the self-evaluations of secondary school students in Turkish conditions, and its reliability and construct validity have been tested.

**Data Analysis**

In case the data show normal distribution, Parametric Statistics Techniques should be used in the analysis (Yurt, 2011). In this context, since the scale data applied in the study showed normal distribution, arithmetic mean, Independent Samples t-Test and F-test techniques were used in the analysis of the research data. The following formula was used to calculate the arithmetic mean in scale forms:

$$\bar{X} = \frac{\text{(Very Good x5)+( Good x4)+(Medium x3)+(Poor x2)+(Very Poor x1)}}{\text{N}}$$

A criterion has been developed for the interpretation of the calculated arithmetic mean. This criterion was developed according to the following formula:

$$\text{Criterion} = \frac{a-b}{5}$$

a- 5 points corresponding to the very good option

b- 1 point corresponding to very poor option

5- Number of options

$$\text{Criterion} = \frac{5-1}{5}$$

Criterion = 0.80

According to this criterion, the following ranges have been determined.

| Range | Result |
|---|---|
| 1.00-1.79 | Very low |
| 1.80-2.59 | Low |
| 2.60-3.40 | Middle |
| 3.41-4.20 | High |
| 4.21-5.00 | Very high |

## Findings

The first sub-problem of the research is “What are the attitudes of secondary school students towards artistic creativity and graphic design?” It was expressed as In order to solve this sub-problem, the scores obtained from the scales were analyzed with descriptive analysis techniques. The results obtained are given in Table 3. The visual creativity levels of the participants in art have an average of 3.33 and 0.70 standard deviation values. Similarly, the mean of attitude scores towards graphic design is 3.30 and the standard deviation is 0.72. When the sample mean of the scales is compared with the 5-point Likert type answers, it is seen that there is a medium level distribution. In other words, the sample average of the scales shows that middle school students have attitudes towards visual creativity in art and graphic design at a moderate level.

Table 3. Artistic Creativity Levels and Attitudes towards Graphic Design of the Research Sample

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| Visual Creativity in Art | 248 | 1.17 | 4.58 | 3.33 | 0.70 |
| Attitude Towards Graphic Design | 248 | 1.00 | 4.75 | 3.30 | 0.72 |

The second sub-problem of the research was “Is there a significant difference between male and female secondary school students' artistic creativity levels and their attitudes towards graphic design?” In order to test this sub-problem, the scores obtained from the scales were compared according to gender. The results obtained are given in Table 4. When the table is examined, it is understood that the mean scores related to the artistic creativity levels of the participants and their attitudes towards graphic design do not show a statistically significant difference according to gender ($p>0.05$). It was observed that the artistic creativity levels and attitudes towards graphic design of female and male students participating in the research were close to each other.

Table 4. Comparison of Secondary School Students' Artistic Creativity Levels and Attitudes towards Graphic Design by Gender

| | Gender | N | Mean | Std. Deviation | t | p |
|---|---|---|---|---|---|---|
| Visual Creativity in Art | Female | 121 | 3.27 | 0.65 | -1.267 | 0.206 |
| | Male | 127 | 3.39 | 0.75 | | |
| Attitude Towards Graphic Design | Female | 121 | 3.28 | 0.66 | -0.417 | 0.677 |
| | Male | 127 | 3.32 | 0.77 | | |

The third sub-problem of the study was “Is there a significant difference between the artistic creativity levels and attitudes towards graphic design of secondary school students studying in private and public schools?”. In order to test this sub-problem, the scores obtained from the scales were compared according to the school type. The results obtained are given in Table 5. When the table is examined, it is understood that the mean scores related to the artistic creativity levels of the participants and their attitudes towards graphic design do not show a statistically significant difference according to the type of school ($p>0.05$). It has been observed that the artistic creativity levels and attitudes towards graphic design of public and private secondary school students participating in the research are close to each other.

Table 5. Comparison of Secondary School Students' Artistic Creativity Levels and Attitudes towards Graphic Design by School Type

| School Type | | N | Mean | Std. Deviation | t | p |
|---|---|---|---|---|---|---|
| Visual Creativity in Art | 1 | 130 | 3.26 | 0.67 | -1.692 | 0.092 |
| | 2 | 118 | 3.41 | 0.73 | | |
| Attitude Towards Graphic Design | 1 | 130 | 3.29 | 0.69 | -0.069 | 0.945 |
| | 2 | 118 | 3.30 | 0.75 | | |

The fourth sub-problem of the study was “Is there a significant difference between the artistic creativity levels and attitudes towards graphic design of secondary school students studying at different grade levels?”. In order to test this sub-problem, the scores obtained from the scales were compared according to the grade level and examined. The results obtained are given in Table 6. When the table was examined, the mean scores related to the artistic creativity levels of the participants and their attitudes towards graphic design differed statistically significantly according to the class level ($p<0.05$). According to Sheffe test analysis, students in 5th, 6th and 7th grades achieved significantly higher artistic creativity and attitude towards graphic design scores compared to 8th grade students in secondary school.

Table 6. Comparison of Secondary School Students' Artistic Creativity Levels and Attitudes towards Graphic Design by Grade Level

| | Grade Level | | Mean | Std. Deviation | F | p |
|---|---|---|---|---|---|---|
| Visual Creativity in Art | 1 | 66 | 3.49 | 0.53 | 9.907 | 0.000 |
| | 2 | 66 | 3.45 | 0.46 | | |
| | 3 | 63 | 3.41 | 0.76 | | |
| | 4 | 53 | 2.89 | 0.89 | | |
| | Total | 248 | 3.33 | 0.70 | | |
| Attitude Towards Graphic Design | 1 | 66 | 3.45 | 0.56 | 6.520 | 0.000 |
| | 2 | 66 | 3.43 | 0.51 | | |
| | 3 | 63 | 3.30 | 0.76 | | |
| | 4 | 53 | 2.94 | 0.92 | | |
| | Total | 248 | 3.30 | 0.72 | | |

In the fourth sub-problem of the study, does the visual creativity of secondary school students have an effect on their attitudes towards graphic design? The answer to the question has been sought. The variables and findings tested with Multiple Regression Analysis are shown in Table 7. When the table is examined, it is understood that the regression model developed to test the effect of secondary school students' visual creativity in art scores on their attitude towards graphic design was found to be statistically significant $R=0.49$; $R2=0.240$; $p<0.001$. Transformational and transactional leadership explain approximately 23% of the total variance in entrepreneurship scores. When the significance values of the calculated standardized path coefficients are examined, it is understood that only transformational leadership is a significant predictor of entrepreneurship ($\beta=0.47$; $p<0.001$).

Table 7. Results of Regression Analysis Performed to Determine the Effect of Visual Creativity in Art on Attitudes towards Graphic Design

| **Dependent variable** | **Independent variable** | **Beta (B)** | **Standardized Beta (β)** | **t** | **p** |
|---|---|---|---|---|---|
| Attitude Towards Graphic Design | (Constant) | 1.748 | .184 | | |
| | Artistic Creativity | .480 | .054 | 8.820 | .000 |
| R= 0.49; $R^2$= 0.24; F= 38. 79; p<0.001 | | | | | |

## Discussion and Conclusion

In the study, secondary school students' visual creativity in art and their attitudes towards graphic design were examined on a relational basis. In the study, it was seen that the participants generally had attitudes towards visual creativity in art and graphic design at a moderate level. Although the research process was completed as desired, it was seen that the visual creativity and graphic design attitude level of the sample group was not at the expected level. These findings are similar to the results of the studies conducted by Kara (2021), Kibici (2022), and Tan (2006). Similarly, Tan (2006) found that secondary school students' attitudes towards the visual arts lesson were at a moderate level. All these functions of visual arts education at secondary school level are important for the artistic development of the individual. Attitude is an important variable in the development of the individual in the field of visual arts, as in all fields. On the other hand, considering the fact that art education encourages individuals to think creatively, prevents children and young people from craving ready-made knowledge and motivates them to create something new, it will be understood more clearly what kind of problems an education system's lack of this discipline will cause. The biggest reason why art education cannot reach the desired level in some other countries, including our country, is related to the inability to understand the aims of the discipline correctly. The most important thing to know here is the fact that the only purpose of art education, which Western countries realized, is not to develop creativity by having practical work done. The current Visual Arts Lesson Curriculum (MEB, 2018) has been organized with this awareness in mind. However, it has been indirectly revealed as a result of the researches that there are problems in the implementation of this program and that the Visual Arts course is mostly practice-oriented as in the past (Alakuş, 2002, Yolcu, 2001, Subaşı, 2014, Özsoy, 2015; Ozdemir, 2021).

According to Rogers (1954, p. 252), motivation is very important in both the creative process and the emergence of the creative product. Intrinsic and extrinsic motivation can be mentioned in the creation of the creative process and product. Although extrinsic motivation plays a role in this process and outcome, the most important factor is self-interest. According to Rogers, many things can be included in self-interest, but in its most general form, self-interest represents intrinsic motivation.

Art education is an integral and unifying element of general education. Because creativity is the basic element in every business. Creativity is not just a mental phenomenon. In addition, it plays a role in creating the integration of senses, emotions, imagination, abilities and all of them (Koç, 2011, p.14). While art education aims to help people make aesthetic judgments, it teaches them to feel new forms, have fun and direct their excitement in the

right ways. This means that art education is not about raising artists; it is aimed to direct every person that he/she has to raise towards creativity and to meet his/her informational, cognitive, sensory and emotional training needs. Art education supports observation, original invention and personal approaches, and develops practical thinking. It increases the power of realizing events in the brain even without it. It improves the dexterity of the individual and helps them to synthesize (Emir, 2009).

Another finding of the study is that the visual creativity of secondary school students and their attitudes towards graphic design are compared according to school type and grade level. On the dependent variables, school type does not cause a significant difference. According to the research findings, middle school senior students exhibited significantly lower attitudes towards visual creativity in art and graphic design compared to their lower class friends. These findings are similar to the results of studies conducted by Kara (2020), Kibici (2022), and Tan (2006). In a study carried out on students studying in 4 different secondary schools in Izmir, Tan (2006) determined that in parallel with the results of this research, the grade levels of the students and their attitude score averages were inversely proportional.

It is reported that due to the fact that 8th grade students are in the preparation period for the High School Entrance Exam, the participation and expectations of the students at this grade level for art classes have decreased. Today, the effect of the factors that result in the indifference brought about by the exam-oriented system causes the effectiveness of the Visual Arts course to decrease gradually. While children are preparing for the exams with all their strength, teachers prepare them according to an exam-based system, and the importance given to the Visual Arts lesson is gradually decreasing in this preparation effort. Thus, students do not have any interest, desire and power towards art and graphic design, even if they want it very much (Kırışoğlu,2009). In addition to these factors, the prejudices or negative attitudes of parents, branch teachers and school administrators towards the lesson affect students, and the idea that Visual Art course is only for talented students is becoming more common day by day. These negative experiences negatively affect students' attitudes towards graphic design and their visual creativity in art.

The last finding of the study is about the relationship between secondary school students' visual creativity levels in art and their attitudes towards graphic design. According to the regression analyzes carried out in the research, it was seen that the visual creativity of the entrepreneurs in art significantly and highly affected their attitudes towards graphic design. These findings are similar to the results of studies conducted by Akca and Kavak (2021), Barsegov (2013), Ivcevic, Hoffmann & McGarry (2022), Licul & Juriševič (2022), Piirto (2011), Resnick (2017), Subaşı (2014). The Creative Learning Spiral, developed by Resnick (2017), was presented as an alternative method in this study to improve the attitude towards arts education in a positive way.

While aiming to raise sensitive people in line with contemporary art education, support is given to the development of individuals who are useful to their environment, who can meet their aesthetic needs, who can produce products, and whose interpretation skills are developed. Through art education, the individual makes himself and his environment meaningful. By providing the opportunity to reveal their creativity and develop their creativity more than they are, students' interest and attitudes towards art also increase at a positive level. While art education raises

creative and productive individuals, it enables children and young people to gain an aesthetic point of view, find good and truth, develop the ability to perceive the environment in a different way, and develop positive affective features (Subaşı, 2014, p. 1). The idea that making the visual arts lesson fun will increase the student's interest in the lesson, active participation and sincerity in the lesson, and artistic creativity has supported the argument that research can be done in this field. In this context, activities that increase students' artistic creativity, competence and attitudes about graphic designs can be included in visual arts classes. In addition, in future research, experimental and mixed model researches can be carried out to develop visual creativity and graphic design attitudes in art.

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