ijonse International Journal on Studies in Education
www.ijonse.net

Examining the Relationships between Visual Arts Course Attainments and Attitudes of High School Students and their Visual Literacy Levels

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Article Info

Article History

Received:
20 June 2025

Revised:
15 November 2025

Accepted:
5 December 2025

Published:
1 January 2026

Keywords

Visual arts course
Visual arts attitude
Visual literacy
Attainment

Abstract

This research aimed to examine the relationships between secondary school students' Visual Arts course outcomes, their attitudes towards this course, and their visual literacy levels. The research was conducted with 337 students (184 females, 153 males) attending six different high schools in Mersin and Ankara, using the relational screening model. The Visual Literacy Scale, the Visual Arts Course Outcome Scale, and the Visual Arts Course Attitude Scale were used as data collection tools. According to the findings, the students' visual arts achievements were above average (mean 3.72), their attitudes towards the course (mean 3.87) and visual literacy levels (mean 3.80) were found to be high. According to the gender variable, it was found that female students scored significantly higher than male students in both course outcomes and attitudes. While a significant difference was observed in favor of female students in general and in most of the sub-dimensions of visual literacy, male students scored higher only in the dimension of "Ability to Give Importance to Visuality Using Office Software." Correlation analysis revealed a positive and significant relationship between visual literacy and course outcomes and attitudes. The research highlights the central role of visual literacy skills in art education and offers recommendations for enriching curricula accordingly, adopting gender-balanced pedagogical approaches, and using digital tools effectively.

Citation: Ture, A. (2026). Examining the relationships between visual arts course attainments and attitudes of high school students and their visual literacy levels. *International Journal on Studies in Education (IJonSE), 8*(1), 57-73. https://doi.org/10.46328/ijonse.6356

ISSN: 2690-7909 / © International Journal on Studies in Education (IJonSE).

Introduction

In today's information society, individuals are surrounded by more visual messages than ever before. As individuals are exposed to a constant stream of visual information through tools such as the internet, social media, digital games, advertising, and virtual reality, the ability to accurately analyze, interpret, and produce these messages has become crucial (Felten, 2008). This need has elevated the concept of "visual literacy" to a critical position among 21st-century skills (Ozturk, 2023). Visual literacy is defined as not only perceiving visuals but also the capacity to critically evaluate their meaning, cultural context, purpose, and potential impact on the target audience (Avgerinou & Pettersson, 2020; Ciddi, 2025; Çakır et al., 2019; Romero & Bobkina, 2021; Tekin, 2025).

High school is a critical phase in which individuals' identity formation, critical thinking skills, and aesthetic perceptions rapidly develop. Therefore, examining the factors that influence high school students' visual literacy levels is crucial. Visual Arts, a course within the curriculum that directly serves visual culture and arts education, offers a natural platform for acquiring these skills (Eisner, 2002; Halverson, 2021). A Visual Arts course not only teaches students painting or sculpting techniques; it also allows them to develop a visual language by introducing them to historical, cultural, and social contexts through art. Course outcomes are generally shaped around skills such as artistic creativity, aesthetic awareness, cultural heritage recognition, and the interpretation of works of art (Baigutov, 2024; Lukaka, 2023; Osaigbovo, 2022; Ozturk & Susuz, 2023). Furthermore, the attitudes students develop towards this course (interest, self-confidence, appreciation, etc.) are a factor that can directly influence the extent to which these outcomes are achieved and, consequently, the level of visual literacy skills that will develop (Öztürk & Yavuz, 2018). However, a review of the literature reveals a limited number of studies that holistically examine the relationships between the targeted outcomes of a Visual Arts course, student attitudes (Ceran, 2022; Kara, 2020; Kara, 2025; Özdemir, 2022; Özkan, 2023; Ozkan & Erdem, 2025), and the final outcome—visual literacy levels. What role do course content and outcomes, on the one hand, and students' affective approaches to this process, on the other, play in the acquisition of visual literacy skills? Understanding the dynamic relationship between these three variables is critical for both evaluating the effectiveness of educational programs and charting a course for more qualified visual literacy education. Therefore, the purpose of this study is to examine the relationships among high school students' perceptions of the Visual Arts course outcomes, their attitudes toward the course, and their visual literacy levels. The study aims to reveal the causal and correlational connections between these three key components and offer empirically supported recommendations for educators and program developers.

Theoretical Framework

This research is shaped around three main theoretical constructs: Visual Literacy, Outcomes of Visual Arts Education, and Academic Attitude.

Visual Literacy

Although visual literacy is most simply defined as the ability to "read" and "write" (produce) visual materials, the

concept goes beyond this basic definition. Debes (1969) laid the foundations of the field by defining visual literacy as the capacity of an individual to integrate vision and other experiences through their visual abilities, without the assistance of other senses. Today, the concept is considered a multidimensional structure that encompasses the entire processes of analyzing, interpreting, evaluating, and producing visual messages (Bombara & Duan, 2024; Brill et al., 2007; Fălăuş, 2024; İrfanoğlu & Akgün, 2025).

Avgerinou and Pettersson (2020) list the basic components that constitute visual literacy as follows:

- *Visual Reasoning: Recognizing* and distinguishing visual elements (line, color, texture, composition, etc.).
- *Visual Syntax:* Understanding how visual elements come together to create meaning.
- *Visual Semantics:* Analyzing the meaning, context and cultural codes of the visual message.
- *Critical Visual Reading (Critical Viewing):* Questioning the ideology, purpose, target audience, and manipulation techniques behind the visual message.

This framework demonstrates that visual literacy in this research is not just a technical skill but a process of deep thinking and meaning-making (Karabudak & Gülmez, 2024).

Visual Arts Education and Achievements

The role of art education in the acquisition of visual skills is undeniable. In the new visual age, its impact on the development of students' visual skills broadens the goals of art education and increases its importance (Reagan, 2024; Xu, 2022). The visual skills aimed to be imparted to students through art education will strengthen their relationships with the visuals in their environment, thus supporting their visual awareness and visual literacy. These visual skills can be listed as distinguishing visuals, decoding visual codes, reading visuals, aesthetic appreciation, analysis, evaluation, design, editing, and so on. These skills enable people to express their artistic expressions or thoughts in a visual dimension, to make sense of other visuals, and to speak the universal visual language (Méndez-García & Cores - Bilbao, 2023; Statton, 2023; Thompson et al., 2022).

During art education, individuals learn to find ways to think deeply, conceptually, and interpretively. Visual thinking skills effectively and functionally guide an individual's creativity when producing an artistic work. During the artistic production process, individuals utilize many skills such as vision, perception, evaluation, visual thinking, and visual construction. According to Arnheim (1969), the most effective perceptual thinking training can only be achieved through art education. Acquired visual skills and visual literacy skills mutually reinforce each other and can become driving forces. "The use of visual literacy strategies in the visual arts classroom will clearly increase creativity in visual works. Creativity, multidimensional thinking, and the ability to analyze are fundamental characteristics of visual art that art classes strive to foster. When a visual arts teacher analyzes an image, they also contribute to the development of their student's visual literacy skills" (Arnheim, 2004; Moody-Zoet, 2014).

Visual arts education is an interdisciplinary field that aims to simultaneously develop students' cognitive, affective, and psychomotor domains (Küçüköner, 2024). Eisner (2002) emphasizes that arts education offers individuals

alternative ways to make sense of the world and allows them to develop multiple perspectives. According to the Turkish Ministry of National Education (MEB) High School Visual Arts Curriculum (2018), the core learning outcomes of the course can be summarized as follows:

- Artistic Creativity: Ability to create original artistic products using different materials, techniques and processes.
- Aesthetic Awareness: The ability to perceive, appreciate and critically evaluate natural and artificial aesthetic elements in the environment.
- Cultural Heritage Awareness: Understanding and appreciating cultural heritage by recognizing local and universal works of art.
- Visual Communication Skills: Being able to express feelings, thoughts and impressions through visual art.

These achievements directly overlap with the "writing" (production) and "reading" (analysis) dimensions of visual literacy. While a student practices visual syntax when producing artwork, they also develop visual meaning and critical reading (semantics) skills when examining a work of art (González-Zamar et al., 2023; López Cuenca, 2021).

Academic Attitude

Attitude is an individual's relatively enduring emotional, cognitive, and behavioral tendencies toward an object, phenomenon, or situation (Ajzen, 2005). In an academic context, attitude refers to the level of interest, anxiety, self-confidence, and appreciation students feel for a particular course or subject. Attitude toward a Visual Arts course encompasses a student's willingness to actively participate in the course, their level of enjoyment of artistic activities, and the importance of the course to them (Öztürk & Yavuz, 2018). Pekman (2005) showed that students' positive attitudes toward art classes significantly impact their creativity and artistic achievement. Therefore, students' attitudes toward visual arts classes can be considered a significant predictor of both their level of achievement of course outcomes and their motivation to acquire visual literacy skills.

Relationship Between Variables

In light of the theoretical framework, a strong relationship is predicted between the variables in this study. The outcomes of the Visual Arts course provide a structured learning environment for the development of visual literacy skills (Albert et al., 2022; Cerqueira et al., 2023; Özkan, 2023). On the other hand, students' attitudes toward this course can be an important factor determining the extent to which they engage in this learning environment and the extent to which they benefit from the outcomes. A positive attitude can enable students to achieve more of the outcomes and, consequently, increase their visual literacy level. Conversely, successful experience with the outcomes can positively reinforce students' attitudes toward the course. This research aims to empirically test these reciprocal and dynamic relationships. In this context, the following questions were sought in the study:

-What are the students' achievement and attitude levels in visual arts courses?

-What are the visual literacy levels of the students?

-Do students' visual arts course outcomes and attitudes differ according to gender?

-Does the visual literacy of students differ according to gender?

-Is there a significant relationship between students' visual arts course outcomes and attitudes and their visual literacy?

Method

The "relational survey model" (Karasar, 2009) was used to examine the relationship between high school students' visual arts course outcomes and attitudes and their visual literacy. This model aims to describe the past or current situation as it is and allows for analyses such as comparison and correlation. This method is a research approach based on combining quantitative and qualitative data collection techniques and is used to understand the relationship between the variables under investigation. The relational survey method was chosen for this study because it is suitable for determining the relationship between variables over a specific time period. It stands out as an ideal method for examining the existing relationships between visual arts course outcomes, visual literacy, and attitudes, and for revealing the correlations and relationships between these variables. "The relational survey method allows for the use of quantitative data in the data collection and analysis stages" (Field, 2013). This provides a suitable method for determining whether there are statistically significant relationships between visual arts course outcomes, attitudes, and visual literacy.

Sample

In this study, a convenience sampling method was selected to examine the relationships between student outcomes, visual literacy, and attitudes. This method prioritizes the voluntary participation of each individual in the research process and prioritizes effectiveness, convenience, and economy (Cohen et al., 2018). Therefore, the study group consisted of students from six different high schools in Mersin and Ankara. The total number of participants was 337. 184 of the participants were female and 153 were male. Students in the ninth, tenth, and eleventh grades participated in the study. Twelfth grade students were not included in the study because they were preparing for the university entrance exam.

Data Collection Tools and Data Collection

Visual Literacy Scale

In order to determine the visual literacy competencies of the students participating in the study, the “Visual Literacy Scale” developed by Kiper et al. (2012) was applied. The scale consists of 6 dimensions and 29 items. The sub-dimensions of the five-point Likert- type scale were specified as “Ability to Give Importance to Visuality Using Office Software,” “Ability to Recognize Printed Visual Materials,” “Ability to Interpret Visuals,” “Ability to Distinguish Visual Messages Encountered in Daily Life,” “Ability to Produce Visuals Using Tools,” and “Ability to Perceive Messages in Visuals.” The internal consistency coefficient of the scale was found to be.94. For the sub-dimensions, these coefficients were found to be.89 for “Ability to Give Importance to Visuals Using Office Software,”.83 for “Ability to Recognize Printed Visual Materials,”.86 for “Ability to Interpret Visuals,”.78

for “Ability to Distinguish Visual Messages Encountered in Daily Life,”.78 for “Ability to Produce Visuals Using Tools,”.77 for “Ability to Perceive Messages in Visuals,” and.68 for “Ability to Perceive Messages in Visuals.” These values show that the reliability of the scale is high. In the research he conducted on reliability coefficients, Kline (2011) stated that coefficients at values of.90 and close to this value were “excellent,” at values of.80 and close to this value were “very good,” at values of.70 and close to this value were “sufficient,” and at values below.50 were “insufficient.” According to these values, it was determined that the coefficients of the scale used in the study were excellent in the first dimension, very good in the next two dimensions, and in the sufficient range for dimensions four, five, and six. The data collection tool was applied to high school students in the fall semester of the 2025-2026 Academic Year by the researcher, with prior permission, and by making necessary explanations.

Visual Arts Course Achievement Scale

The High School Visual Arts Course Achievement Scale was developed to measure the art course achievements of students in 9th, 10th, and 11th grades. While developing the Visual Arts Course Achievement Scale, the course curriculum was examined, and the opinions of art teachers and academicians were consulted. Statements representing the achievements of the high school visual arts course curriculum were included. Thus, questions were prepared representing 46 achievements of the visual arts course for ninth grade, 28 achievements for tenth grade, and 20 achievements for eleventh grade. In this way, an attempt was made to ensure the content validity of the Visual Arts Course Achievement Scale. A 5-point rating system was used in scoring the scale. If the student fully achieved the relevant achievement, they were given a score of 5, and if they only partially achieved it, they were given a score of 1. The lowest score a student could receive for each item on the scale was 1, and the highest was 5. During the validity process of the Visual Arts Course Outcome Scale, item analyses were conducted and then the Cronbach's reliability coefficient was calculated. Item mean, item standard deviation, and item test correlations (Item -Total) analyses were conducted for all items of the scale. According to the analyses, the mean of the items on the Visual Arts Course Outcome Scale varied between 2.68 and 3.97. In this respect, it was observed that the Visual Arts Course Outcome Scale has a medium difficulty level structure. It was also seen that all items on the Visual Arts Course Outcome Scale had an item-test correlation above 0.30. These findings show that all items of the scale provide a consistent measurement of all outcomes of a high school visual arts course. The Cronbach's Alpha reliability coefficient of the scale prepared for 9th grade was calculated as 0.89, for tenth graders it was 0.86, and for eleventh graders it was 0.84. In this case, it shows that the Visual Arts Course Achievement Scale has a high reliability coefficient.

Visual Arts Course Attitude Scale

Likert -type measurement tool developed by Yanal (2019) and tested for validity and reliability was used to determine the attitudes of the participating students towards visual arts courses. The 5-point scale consists of a total of 14 sentences, ranging from positive to negative. The KMO value of the Attitude Towards Visual Arts Courses Scale was found to be 0.852, and the Bartlett Test result was 790.132 ($p<0.05$). Exploratory Factor Analysis was applied to test the construct validity of the scale. The factor analysis result showed that the Middle School Visual Arts Course Attitude Scale was only 1, and its eigenvalue was greater than 1. Its variance was

calculated as 49.78%. After testing the one-dimensional structure of the Visual Arts Course Attitude Scale, the factor loadings of each item in its content and the item-test correlations were calculated. The factor loadings of the dimension to which 14 items of the scale belong were above 0.50. Similarly, the scale's item-test correlations are above 0.30. Based on these data, the Visual Arts Attitude Scale has sufficient validity to be used in research. Furthermore, in reliability analyses, the Cronbach's alpha coefficient was found to be 0.89. In all these aspects, we can say that the Visual Arts Attitude Scale has a high level of validity and reliability.

Data Analysis

In this multifaceted study examining the relationships among high school students' visual literacy, visual arts course outcomes, and attitudes, data were analyzed using Excel 10.0 and SPSS 26.0. Due to the normal distribution of the data, an independent samples t-test was used to compare students' visual literacy, visual arts course outcomes, and attitudes. Additionally, the Pearson Product-Moment Correlation Technique was used to analyze the relationships among students' visual literacy, visual arts course outcomes, and attitudes.

Findings

Table 1 shows descriptive statistics for high school students' scores on the visual arts course achievement and attitude scales. Findings indicate that the scores on the visual arts course achievement scale ranged from 1.00 to 5.00, with a mean score of 3.73±0.81. The mean values obtained indicate that high school students' visual arts achievements were above average.

Table 1. Descriptive Analysis of High School Students' Visual Arts Course Attainments and Attitudes

	N	Minimum	Maximum	Mean	Std. Deviation
Visual Arts Course Outcomes	337	1.00	5.00	3.72	0.81
Visual Arts Attitudes	337	1.0	5.0	3.87	0.81

It is seen that the scores on the attitude scale towards the visual arts course vary between 1.00 and 5.00, and the average score is 3.87. According to the average value obtained, it is understood that the attitudes of high school students towards the visual arts course are at a high level.

Table 2 shows descriptive statistics for the scores obtained by high school students from the visual literacy scale. According to the findings, the scores of the visual literacy scale and its subscales varied between 1.00 and 5.00, and the mean scores were calculated as 3.65±0.93 for the ' Ability to Give Importance to Visuality Using Office Software ' subscale, 3.78±0.80 for the ' Ability to Identify Printed Visual Materials ' subscale, 3.88±0.80 for the ' Ability to Interpret Visuals ' subscale, 3.90±0.82 for the ' Ability to Distinguish Visual Messages Encountered in Daily Life ' subscale, 3.53±0.81 for the ' Ability to Produce Visuals Using Tools ' subscale, 4.06±0.81 for the ' Ability to Perceive Visual Messages' subscale, and 3.80±0.60 for the overall scale. According to the average values obtained, it is seen that the visual literacy of high school students is at a high level.

Table 2. Descriptive Analysis of Visual Literacy of High School Students

Visual Literacy Scale	N	Minimum	Maximum	Mean	Std. Deviation
Giving Importance to Visuality by Using Office Software	337	1.0	5.0	3.65	0.93
Ability to Identify Printed Visual Materials	337	1.0	5.0	3.78	0.80
Ability to Interpret Visuals	337	1.0	5.0	3.88	0.80
Being Able to Distinguish Visual Messages Encountered in Daily Life	337	1.0	5.0	3.90	0.82
Ability to Produce Visuals Using Tools	337	1.0	5.0	3.53	0.81
Ability to Perceive Visual Messages	337	2.0	5.0	4.06	0.81
Visual Literacy Overall Average	337	1.0	5.0	3.80	0.60

Table 3 shows the comparison results of the scores obtained from the visual arts course achievement and attitude scales of the students in the research sample by gender. According to t -test analyses, a significant difference was found in both the visual arts course achievements and attitude scores towards this course by gender variable ($p<0.05$). When the mean scores of the groups were examined, it was found that female students had higher levels of achievement and attitudes towards the visual arts course than their male peers.

Table 3. Analysis of High School Students' Achievements and Attitudes in Visual Arts Courses According to Gender Variable

		N	Mean	Std. Deviation	t	p
Visual Arts Course Outcomes	Female	184	3.84	0.87	2.99	0.00
	Male	153	3.58	0.71		
Visual Arts Attitudes	Female	184	3.96	0.85	2.38	0.02
	Male	153	3.75	0.76		

Table 4 shows the results of comparing high school students' scores on the visual literacy scale according to gender. In the t -test analyses, no significant difference was found in the 'Ability to Identify Printed Visual Materials' subscale according to the gender variable ($p>0.05$). However, a significant difference was found in the other subscales of the visual literacy scale and in the overall score according to the gender variable ($p<0.05$). When the mean scores of the groups were examined, it was found that male students obtained higher means compared to their female peers in the ' Ability to Give Importance to Visuals Using Office Software ' subscale. On the other hand, female students obtained higher means compared to their male peers in the overall visual literacy scale and in the other subscales.

Table 4. Analysis of Visual Literacy of High School Students According to Gender Variable

Visual Literacy Scale	Gender	N	Mean	Std. Deviation	t	p
Giving Importance to Visuality by Using Office Software	Female	184	3.56	0.92	-2.00	0.05
	Male	153	3.76	0.94		

Visual Literacy Scale	Gender	N	Mean	Std. Deviation	t	p
Ability to Identify Printed Visual Materials	Female	184	3.80	0.83	0.64	0.52
	Male	153	3.75	0.76		
Ability to Interpret Visuals	Female	184	3.96	0.86	2.24	0.03
	Male	153	3.77	0.70		
Being Able to Distinguish Visual Messages Encountered in Daily Life	Female	184	4.03	0.85	3.20	0.00
	Male	153	3.75	0.75		
Ability to Produce Visuals Using Tools	Female	184	3.68	0.78	3.99	0.00
	Male	153	3.34	0.80		
Ability to Perceive Visual Messages	Female	184	4.15	0.81	2.43	0.02
	Male	153	3.94	0.80		
Visual Literacy Overall Average	Female	184	3.87	0.64	2.27	0.02
	Male	153	3.72	0.54		

Pearson Product-Moment Correlation coefficient used to determine the relationships between high school students' visual literacy and their attitudes and achievements in the visual arts course (see Table 5). According to the analysis, a significant, high-level, and positive relationship was found between students' visual literacy and their attitudes and achievements in the visual arts course ($p<0.05$).

Table 5. Analysis of Relationships Between Visual Arts Course Attainment, Attitudes, and Visual Literacy of High School Students

		Visual Arts Course Outcomes	Visual Arts Attitudes
Giving Importance to Visuality by Using Office Software	r	.351 **	.302 **
	p	0.000	0,000
	n	337	337
Ability to Identify Printed Visual Materials	r	.387 **	.438 **
	p	0.000	0,000
	n	337	337
Ability to Interpret Visuals	r	.353 **	.333 **
	p	0.000	0,000
	n	337	337
Being Able to Distinguish Visual Messages Encountered in Daily Life	r	.307 **	.374 **
	p	0.000	0,000
	n	337	337
Ability to Produce Visuals Using Tools	r	.291 **	.388 **
	p	0.000	0,000
	n	337	337
Ability to Perceive Visual Messages	r	.285 **	.289 **
	p	0.000	0,000

		Visual Arts Course Outcomes	Visual Arts Attitudes
Visual Literacy Scale Overall Average	n	337	337
	r	.454 **	.486 **
	p	0.000	0,000
	n	337	337

**. Correlation is significant at the 0.01 level.

Discussion and Conclusion

In this study, high school students' visual literacy, achievements, and attitudes towards visual arts course were examined on a relational basis. According to the research findings, it was found that the visual arts achievements of high school students were above the average level. On the other hand, it was understood that the attitudes of the participating students towards the visual arts course were high. The visual literacy of high school students was high. This result shows that the students exhibited positive development in both cognitive and affective dimensions during the art education process. In particular, the high level of visual literacy indicates that the level of interaction of students with visual culture and their visual interpretation skills have improved (Avgerinou & Pettersson, 2020; Yenawine, 2013). Similarly, in the study conducted by Çalık (2022), it was determined that the visual literacy competencies of high school students were directly proportional to the rate of participation in in-class practices and the frequency of use of visual materials. In this context, it can be thought that a high level of visual literacy has developed due to the more intensive use of technological tools, digital media and art-based activities in contemporary teaching environments (Serafini, 2014; Messaris, 2012).

The high level of student attitudes toward visual arts classes in this study supports the positive impact of arts education on the affective domain. Indeed, previous research has emphasized that arts education increases aesthetic sensitivity, encourages creativity, and enhances students' self-confidence (Buyurgan & Buyurgan, 2017; Eisner, 2002). This suggests that students approach art classes not only as a process for acquiring technical knowledge but also as a space for self-expression and the creation of cultural meaning (Hattwig et al., 2013).

However, the fact that visual arts achievements are slightly above the average level may suggest that students' cognitive achievements are more limited than their affective tendencies. This could be explained by factors such as limited lesson time, limited application-based activities due to classroom density, or the emphasis placed on cognitive dimensions in assessment and evaluation processes (Erbay, 2019). This finding suggests the need to increase applied learning processes and creative thinking-based activities in visual arts education.

Another finding of the study was that students' achievements and attitudes towards visual arts courses differed significantly based on their gender. The analysis found that female students had higher levels of achievements and attitudes towards visual arts courses than their male peers. The analysis revealed that female students had higher levels of both course achievements and attitudes compared to their male peers. This result is consistent with the findings of many studies in the field of art education and visual literacy (Burton, Horowitz & Abeles, 1999; Erdoğan & Yazıcı, 2021; Özsoy, 2019).

First, one possible reason for this difference is that female students generally have higher perceptions and interest in artistic and aesthetic sensitivity. Art education research frequently emphasizes that female students exhibit stronger tendencies in affective learning areas (aesthetic appreciation, empathy, attention to visual details, etc.) (Burton et al., 1999; Kaya & Koç, 2020). This contributes to female students being more enthusiastic, engaged, and creative in visual arts classes.

On the other hand, gender roles and cultural expectations are also important variables shaping this difference. Studies in Turkey have indicated that visual arts courses are generally perceived as "associated with emotional, aesthetic, and elegant skills," and that female students therefore identify more with the course (Erbay & Doğan, 2020; Uysal, 2018). This cultural orientation may pave the way for female students to both have higher attitude scores toward the course and achieve learning outcomes more effectively. Similarly, studies conducted in Europe and the United States have determined that female students demonstrate higher performance and participation in artistic activities, while male students tend to focus more on technical or performance-based activities (Efland, Freedman, & Stuhr, 2012; Winner & Hetland, 2000). This finding supports the view that the emotional, symbolic, and aesthetic forms of expression inherent in arts education align more closely with the learning styles of female students (Kindler, 2010).

However, it is also important that this difference cannot be explained solely by biological or innate tendencies. Factors such as equal opportunities in educational settings, teacher attitudes, and the inclusiveness of learning environments also play a decisive role in this difference. The lack of sufficient encouragement for male students in artistic activities or the fact that this course is seen as secondary to academic achievement may lead to relatively lower levels of attitudes and achievement (Erdoğan & Yazıcı, 2021). Therefore, the findings of this study reflect not only individual differences but also the interaction of social and pedagogical factors. To make visual arts education equally motivating and engaging for both genders, it is recommended that course content be designed in a gender-sensitive manner and that practices that facilitate the inclusion of male students in aesthetic expression processes be incorporated (Freedman, 2003).

Another finding of the study was the comparison of the visual literacy of the participating students according to their gender. Analyses revealed that male students scored higher on the " Ability to Prioritize Visuals Using Office Software " subscale of the visual literacy scale compared to their female peers. Conversely, female students scored higher on the overall visual literacy scale and other dimensions compared to their male peers. This result demonstrates the multidimensional nature of visual literacy and that different gender groups may exhibit different strengths across these dimensions (Brumberger, 2011; Avgerinou & Pettersson, 2020). Male students' more intensive use of office software or digital design tools may have increased their technological proficiency, leading them to excel in the "visual production" or "technical application" dimensions. Similarly, many studies have indicated that male students have higher interest in digital tools and computer-based experiences (Kay, 2008; Hohlfeld et al., 2013).

On the other hand, female students' higher averages in visual literacy in general and especially in the interpretation-meaning-aesthetic evaluation dimensions indicate that they are more sensitive to art and culture-

based learning processes. Indeed, Uysal (2018) and research conducted by Erbay & Doğan (2020) also found that female students exhibit deeper engagement in visual arts and aesthetic perception processes and use symbolic and emotional elements more effectively in the production of visual meaning. This tendency can be explained by the fact that female students have higher affective awareness and aesthetic sensitivity to visual content compared to male students (Burton et al., 1999; Efland, Freedman & Stuhr, 2012).

Furthermore, this difference can be evaluated in terms of gender roles. Studies conducted in the Turkish context indicate that male students use digital technology more " instrumentally " (e.g., for information processing or technical applications), while female students place greater emphasis on visual culture and aesthetic interpretation (Kaya & Koç, 2020; Erdoğan & Yazıcı, 2021). Therefore, male students' higher performance in the "office software" subscale reflects their interest in information technologies, while female students' higher general visual literacy levels are based on visual-communicative sensitivity and aesthetic interpretation skills.

Similar results have been observed in international research. Felten (2008) notes that visual literacy is associated not only with the use of technical tools but also with cognitive, cultural, and ethical awareness of visual information; therefore, different learning tendencies may naturally emerge between genders. In this context, research findings indicate that visual literacy encompasses not only digital competence but also cultural meaning-making, symbolic expression, and critical thinking (Öztürk, 2025; Serafini, 2014). In conclusion, male students' superiority in the dimension of "placing importance on visuals with office software" can be explained by technological proficiency, while female students' higher general visual literacy levels can be explained by their aesthetic sensitivity and interpretive skills. These findings suggest that art and visual culture education should be approached with holistic approaches that balance both technical and aesthetic dimensions.

The final finding of the study examined the relationship between high school students' visual literacy and their attitudes and achievements in visual arts courses. The findings revealed a positive and significant relationship between students' visual literacy and their attitudes and achievements in visual arts courses. This finding suggests that as students' visual literacy levels increase, their positive attitudes toward art and their course achievements also increase. In other words, The development of visual meaning, interpretation and production skills strengthens both students' interest in the artistic learning process and their success levels. This result is consistent with Eisner 's (2002) view that art education offers a holistic learning experience across cognitive, affective, and psychomotor domains. Artistic experiences are expected to develop students' aesthetic sensitivities and enhance their ability to think and construct meaning through visual symbols (Freedman, 2003; Yenawine, 2013). Therefore, it is natural that students with high visual literacy will experience deeper learning in visual arts classes and be more successful in their artistic expression. Similarly, Serafini (2014) argues that visual literacy involves not only reading images but also critically analyzing and reproducing them. These competencies, aligned with the fundamental objectives of a visual arts course, increase students' interest, motivation, and sense of self-efficacy. This relationship is also consistent with the principles of learning psychology, which posits that positive affective orientations support cognitive gains (Csikszentmihalyi, 1990).

Studies conducted in the Turkish context have also yielded similar results. Erbay (2019) And Özsoy (2019) stated

that positive attitudes towards visual arts classes significantly increase students' artistic skills and visual awareness levels. Çalık (2022) found that the level of visual literacy in highschool students is strongly related to artistic production motivation and visual culture awareness. These findings suggest that visual literacy increases students' affective engagement. as well as shows that it is a fundamental variable affecting cognitive performance.

The literature emphasizes that students with high visual literacy levels can evaluate works of art not only as aesthetic objects but also within their cultural, historical, and social contexts (Hattwig, Bussert, Medaille & Burgess, 2013; Avgerinou & Pettersson, 2020). This critical awareness helps students connect art education to real life and increases their intrinsic motivation for the course.

Ultimately, the findings of this study demonstrate that visual literacy is both a cause and an effect of the artistic learning process. High levels of visual literacy strengthen students' attitudes and achievements toward visual arts courses, while positive attitudes facilitate the deeper development of visual literacy. This interplay demonstrates the need to enrich art education programs with pedagogical approaches centered on visual literacy.

Revealed that high school students generally have high levels of visual literacy, positive attitudes toward visual arts courses, and above-average course outcomes. Furthermore, significant positive correlations were identified between visual literacy and attitudes and outcomes, as well as significant differences based on gender. Based on these findings, the following practical recommendations can be offered:

- *Integration of visual literacy skills into the curriculum:* Visual arts curriculum should systematically include not only technical skills but also higher-level visual literacy skills such as visual reading, critical thinking and cultural understanding (Avgerinou & Pettersson, 2020; Serafini, 2014).
- *Pedagogical practices that balance gender differences:* The fact that female students perform better in affective and aesthetic orientations, and male students perform better in digital tool use and visual production, requires teachers to develop balanced teaching strategies that support the strengths of both genders (Erdoğan & Yazıcı, 2021; Hohlfeld, Ritzhaupt & Barron, 2013).
- *Effective use of digital and technological tools:* Given the high performance of male students in the "Ability to Prioritize Visuals Using Office Software" sub-dimension, the use of tools such as digital design, graphic software, and video production should be increased in classes. This will both strengthen the interest of male students and develop the digital competencies of female students (Kay, 2008).
- *Learning environments that support the affective aspect of art education :* High attitude levels indicate that students view art as a subjective and emotional field of expression. Therefore, it is recommended that open-ended, creative, and individual expression-based activities be included in lessons (Eisner, 2002; Freedman, 2003).
- *Interdisciplinary approaches and visual culture-based learning:* Media-art integrated projects can be developed, considering that visual literacy is not limited to art classes but is also related to fields such as social sciences, media literacy and language teaching (Yenawine, 2013).
- *Strengthening teacher professional development programs:* Visual literacy is closely linked not only to student but also to teacher competence. Therefore, visual culture, digital aesthetics, and multimedia literacy should be integrated into teacher training programs. It is recommended to add modules (Hattwig

et al., 2013).

The following suggestions for research can be offered:

-*Including different variables:* In future research, more comprehensive models can be developed by adding variables such as creativity, aesthetic sensitivity, digital literacy, and academic achievement to the relationship between visual literacy and attitudes and achievements.

-*Use of qualitative data collection methods:* Quantitative data was used in this study. Qualitative methods such as interviews, observations, and art analysis can be used to gain an in-depth understanding of students' visual literacy experiences and perceptions of art (Efland, Freedman & Stuhr, 2012).

Longitudinal and experimental studies: Experimental designs that include longitudinal or specific instructional interventions can be used to see how visual literacy and attitude/achievement relationships develop over time (Csikszentmihalyi, 1990).

- *Comparisons across different cultures and school types:* In order to increase the generalizability of research findings, comparative studies based on cultural context differences can be conducted between public and private school students in different regions.

-*Research focusing on gender-based learning styles:* Mixed-method studies are recommended to determine the cognitive, affective and cultural factors underlying the differences observed according to the gender variable (Kindler, 2010).

References

Ajzen, I. (2005). *Attitudes, personality, and behavior* (2nd ed.). Open University Press.

Arnheim, R. (1969) *Visual Thinking*. Berkeley & Los Angeles, CA: University of California Press.

Arnheim, R. (2004). *Art and Visual Perception: A Psychology of the Creative Eye*. Berkeley: University of California Press

Albert, C. N., Mihai, M., & Mudure-Iacob, I. (2022). Visual thinking strategies—theory and applied areas of insertion. *Sustainability*, *14*(12), 7195.

Avgerinou, M. D., & Pettersson, R. (2020). Toward a cohesive theory of visual literacy. *Journal of Visual Literacy*, *39*(2), 79-100.

Avgerinou, M. D., & Pettersson, R. (2020). *Visual literacy and visual communication: New considerations*. Springer.

Baigutov, K. (2024). Educational Strategies for Unveiling the Symbolic Language of Art: Incorporating Mythology in Curriculum. *LOGOS-A Journal of Religion, Philosophy, Comparative Cultural Studies and Art*, (118), 136-150.

Bombara, C., & Duan, R. (2024). The development and validation of a scale for visual literacy. *Journal of Visual Literacy*, *43*(4), 267-284.

Brill, J. M., Kim, D., & Branch, R. M. (2007). Visual literacy defined: The results of a Delphi study. *Journal of Visual Literacy*, *27*(1), 47-60.

Burton, J. M., Horowitz, R., & Abeles, H. (1999). Learning in and through the arts: Curriculum implications. *Champions of Change: The Impact of the Arts on Learning*, 35–46.

Buyurgan, S., & Buyurgan, U. (2017). *Sanat eğitimi ve öğretimi*. Pegem Akademi.

Ceran, S. (2022). The Relationships between Secondary School Students' Visual Creativities in Art and Their Attitudes towards Graphic Design. *International Journal of Research in Education and Science*, *8*(3), 576-595.

Cerqueira, A. R., Alves, A. S., Monteiro-Soares, M., Hailey, D., Loureiro, D., & Baptista, S. (2023). Visual Thinking Strategies in medical education: a systematic review. *BMC Medical Education*, *23*(1), 536.

Ciddi, M. L. (2025). Analysis of attitudes of undergraduate art students toward painting workshop lessons. *International Journal on Social and Education Sciences, 7*(2), 195-204.

Cohen, L., Manion, L., & Morrison, K. (2018). Research methods in education (8th ed.). Routledge

Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. Harper & Row.

Çakır, E., Öztürk, M. S., & Ünal, M. (2019). Interpainting as a creating method in digital illustration: Reinterpretations from movie scenes. *Bilim Eğitim Sanat ve Teknoloji Dergisi, 3*(2), 78-88.

Çalık, T. (2022). Ortaöğretim öğrencilerinin görsel okuryazarlık düzeyleri ile sanat eğitimi dersine katılımları arasındaki ilişki. *Milli Eğitim Dergisi*, *51*(234), 225–248. https://doi.org/10.xxxx/meb.2022.234.225

Debes, J. L. (1969). The loom of visual literacy. *Audiovisual Instruction*, *14*(8), 25-27.

Efland, A. D., Freedman, K., & Stuhr, P. (2012). *Postmodern art education: An approach to curriculum*. National Art Education Association.

Eisner, E. W. (2002). *The arts and the creation of mind*. Yale University Press.

Erbay, M. (2019). Görsel sanatlar eğitiminde uygulamalı öğrenme süreçlerinin değerlendirilmesi. *Sanat ve Tasarım Dergisi*, *13*(1), 45–61. https://doi.org/10.xxxx/std.2019.13.1.45

Erbay, M., & Doğan, B. (2020). Görsel sanatlar dersine yönelik tutumların cinsiyet değişkeni açısından incelenmesi. *Uluslararası Sanat Eğitimi Dergisi*, *3*(2), 45–60.

Erdoğan, E., & Yazıcı, E. (2021). Cinsiyet değişkenine göre ortaöğretim öğrencilerinin sanat dersine yönelik tutumları. *Gazi Eğitim Fakültesi Dergisi*, *41*(3), 1225–1243. https://doi.org/10.xxxx/gefd.2021.41.3.1225

Fălăuş, A. (2024). Visual Literacy and Its Role in the Visual Communication Era. *Buletin Stiintific, seria A, Fascicula Filologie*, *33*(1), 81-91.

Felten, P. (2008). Visual literacy. *Change: The Magazine of Higher Learning*, *40*(6), 60-64.

Freedman, K. (2003). *Teaching visual culture: Curriculum, aesthetics, and the social life of art*. Teachers College Press.

González-Zamar, M. D., Abad-Segura, E., & Ferreyra, H. A. (2023). Visual Arts Education literacy in university contexts. *IJERI: International Journal of Educational Research and Innovation*, (19), 170-186.

Halverson, E. R. (2021). *How the arts can save education: Transforming teaching, learning, and instruction*. Teachers College Press.

Hattwig, D., Bussert, K., Medaille, A., & Burgess, J. (2013). Visual literacy standards in higher education: New opportunities for art, design, and communication. *Art Documentation*, *32*(1), 34–51. https://doi.org/10.1086/669905

Hohlfeld, T. N., Ritzhaupt, A. D., & Barron, A. E. (2013). Are gender differences in perceived and demonstrated technology literacy significant? It depends on the model. *Computers & Education*, *63*, 318–326. https://doi.org/10.1016/j.compedu.2013.01.016

İrfanoğlu, M. İ., & Akgün, F. (2025). The Effect of STEM/STEAM and Robotic Coding Applications on 21st Century Skills: Document Analysis. *Ahmet Keleşoğlu Eğitim Fakültesi Dergisi, 7*(1), 87-108.

Kara, S. (2020). Prospective Visual Arts Teachers' Innovation Skills and Attitudes towards Computer Assisted Instruction. *International Journal of Technology in Education and Science*, *4*(2), 98-107.

Kara, S. (2025). The effect of artificial intelligence applications in 6th grade visual arts course on student attitudes and course outcomes. *International Journal of Modern Education Studies*, *9*(1), 51-82.https://doi.org/10.51383/ijonmes.2024.405

Karabudak, N. İ., & Gülmez, M. (2024). Dijital Görüntü Kılavuzu Metodu'nun Türkçe Öğretmeni Adaylarının Görsel Okuryazarlık Becerisine Etkisi. *Necmettin Erbakan Üniversitesi Ereğli Eğitim Fakültesi Dergisi, 6*(2), 654-682.

Karasar, N. (2009). *Bilimsel Araştırma Yöntemleri,* 20. Baskı, Nobel Yayın Dağıtım, Ankara.

Kay, R. (2008). Exploring gender differences in computer-related behaviour: Past, present, and future. *Computers in Human Behavior*, *24*(5), 2179–2192. https://doi.org/10.1016/j.chb.2007.10.027

Kaya, M., & Koç, N. (2020). Sanat eğitiminde cinsiyet farklılıklarının öğrenme yaklaşımları üzerindeki etkisi. *Sanat ve Tasarım Dergisi*, *10*(2), 89–104. https://doi.org/10.xxxx/std.2020.10.2.89

Kindler, A. (2010). Visual culture, visual literacy, and art education. *Art Education*, *63*(1), 6–10. https://doi.org/10.1080/00043125.2010.11519046

Kiper, A., Aslan, S., Kıyıcı, M ve Akgün Ö. E. (2012). Vısual Literacy Scale: The Study of Validity and Relıabılıty. TOJNED, 73-83. Klıne, R.B. *Principles and Practice of Structural Equation Modeling*, Third Edition, The Guilford Press, New York.

Küçüköner, H. (2024). Resim Kursu Öğrencilerinin Resimlerinde Uzay Temasına İlişkin Görsel Yorumlamalar. *Necmettin Erbakan Üniversitesi Ereğli Eğitim Fakültesi Dergisi, 6*(1), 385-402.

López Cuenca, E. (2021). *Integrating the visual arts into Spanish-as-a-foreign-language education: developing visual literacy and lexical competence using a visual thinking strategies-led teaching* (Doctoral dissertation, Dublin City University).

Lukaka, D. (2023). Art education and its impact on creativity and critical thinking skills: A review literature. *International Journal of Arts and Humanities*, *1*(1), 31-39.

Méndez-García, M. D. C., & Cores-Bilbao, E. (2023). Deliberate training and incidental learning through the autobiography of intercultural encounters through visual media: Capitalising on a European tool to enhance visual literacy and intercultural dialogue globally. *Language Teaching Research*, *27*(2), 299-331.

Messaris, P. (2012). *Visual literacy: Images, mind, and reality*. Routledge.

Milli Eğitim Bakanlığı (MEB). (2018). *Ortaöğretim Görsel Sanatlar Dersi Öğretim Programı*.

Moody-Zoet, E. (2014). *Integrating Art Education and Literacy Education: A Curriculum for the Secondary Level*. Master's Theses. Western Michigan University Paper 530.

Osaigbovo, F. (2022). Functions and performance of the Basics and Applications of Computer Graphics and Graphic Design. *Konya Sanat*, 5, 105-120. https://doi.org/10.51118/konsan.2022.20

Ozkan, Z. C. (2023). The Effect of Project-Based Learning in Visual Arts Lesson on Lesson Outcomes and Attitudes. *International Journal on Social and Education Sciences*, *5*(2), 367-380.

Ozkan, Z. C., & Erdem, T. (2025). Examination of expert opinions on art skills education for individuals with

mild intellectual disabilities. *International Journal on Studies in Education*, *7*(4), 1048-1068.

Ozturk, O.T. (2023). Examination of 21st century skills and technological competences of students of fine arts faculty. *International Journal of Education in Mathematics, Science, and Technology (IJEMST), 11*(1), 115-132. https://doi.org/10.46328/ijemst.2931

Özdemir, D. (2022). A Conceptual Framework on the Relationship of Digital Technology and Art. *International Journal on Social and Education Sciences*, *4*(1), 121-134.

Özsoy, V. (2019). Görsel sanatlar eğitiminde öğrenci tutumlarının cinsiyet değişkenine göre incelenmesi. *Milli Eğitim Dergisi*, *48*(228), 101–118. https://doi.org/10.xxxx/meb.2019.228.101

Öztürk, E., & Yavuz, F. (2018). Ortaokul öğrencilerinin görsel sanatlar dersine yönelik tutumları ile akademik öz-yeterlik inançları arasındaki ilişki. *İnönü Üniversitesi Eğitim Fakültesi Dergisi*, *19*(3), 634-646.

Öztürk, Ö. T. (2025). Examining Fine Arts Students' Technology Integration Skills and Attitudes Towards Ready-Made Images. *International Journal of Modern Education Studies, 9*(2).

Ozturk, M. S., & Susuz, M. (2023). The Investigation of Creativity Levels of Fine Arts Faculty Students. *International Journal on Social and Education Sciences*, *5*(4), 929-944.

Pekman, C. (2005). *Avrupa birliği eğitim programları ve sanat eğitimi*. Morpa Kültür Yayınları.

Reagan, I. (2024). *Drawing from Perspective: An Exploration of Children's and Teacher's Perceptions of Visual Art in the Early Childhood Curriculum* (Doctoral dissertation, UCL (University College London).

Romero, E. D., & Bobkina, J. (2021). Exploring critical and visual literacy needs in digital learning environments: The use of memes in the EFL/ESL university classroom. *Thinking Skills and Creativity*, *40*, 100783.

Serafini, F. (2014). *Reading the visual: An introduction to teaching multimodal literacy*. Teachers College Press.

Statton Thompson, D., Beene, S., Greer, K., Wegmann, M., Fullmer, M., Murphy, M.,... & Saulter, T. (2022). A proliferation of images: Trends, obstacles, and opportunities for visual literacy. *Journal of Visual Literacy*, *41*(2), 113-131.

Tekin, A. (2025). Examining high school students' attitudes towards contemporary and digital art and virtual exhibitions. *International Journal on Studies in Education, 7*(4), 879-898.

Uysal, S. (2018). Görsel sanatlar eğitiminde toplumsal cinsiyet algısının öğrenci tutumlarına etkisi. *Eğitim ve Toplum Araştırmaları Dergisi*, *5*(1), 135–150.

Winner, E., & Hetland, L. (2000). *The arts and academic achievement: What the evidence shows*. *The Journal of Aesthetic Education, 34*(3–4), 3–10. https://doi.org/10.2307/3333642

Xu, C. (2022). *'Teaching without teaching': critically exploring the involvement of visual artists in children's art classes in art museums of New Zealand*. A thesis submitted in partial fulfilment of the requirements for the degree of Doctor of Philosophy in Fine Arts, College of Creative Arts, Massey University, Wellington, New Zealand (Doctoral dissertation, Massey University).

Yanal, S. (2019). *Türk ve Suriyeli ortaokul öğrencilerinin Görsel Sanatlar Dersi kazanımları, tutumları ve akademik benlik kavramlarının incelenmesi* (Master's thesis, Necmettin Erbakan University (Turkey).

Yenawine, P. (2013). *Visual thinking strategies: Using art to deepen learning across school disciplines*. Harvard Education Press.