Technical experience with tempera paintings in a bachelor degree course in Turkey

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Article Info

ABSTRACT

This article aims to understand the place of the tempera technique in art history, which is thought to be encountered for the first time by art education undergraduate students, and to determine the effects on the participants after the application. The study consists of the findings and results of the first and second research questions in the master thesis "Tempera technique and its use in the course of painting courses on undergraduate level." In this study the "case study" pattern was used, and is one of the qualitative research approaches. The participants of the research are eight students studying in Bursa Uludag University, Faculty of Education, Department of Fine Arts Education in the 2018-2019 academic year. The data collection tools of literature review and two interview forms interview were used. The findings obtained were evaluated by thematic analysis technique. According to the findings obtained in the research, it was observed that the participants did not have prior knowledge about the tempera technique before oral presentation and application. It was concluded that there were differences in the levels of interest and knowledge after the teaching process, and that there were positive changes in their opinions regarding the technique.

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1. INTRODUCTION

In its simplest sense, art is a means of expressing people's feelings and thoughts, and a form of communication. According to Hodge [1] throughout history, art has been used for many different purposes such as "religious depiction, propaganda, memorial, social criticism, interpretation of reality, description of beauty, storytelling." The definition of art has changed according to periods or socio-cultural structure of societies. Throughout the existence of mankind, it has always existed, albeit sometimes in a primitive form, and throughout history societies have always had art in some form.

Painting art, which is among the plastic arts, is a branch of art that has a wide variety in terms of techniques used. Tempera is one of the oldest painting techniques. The word tempera is often used for "paint using water, pigment, egg yolk (rarely white of the egg)" [2, 3] and pictures made with this paint. Today, besides these basic materials, vinegar, alcohol and other materials such as casein are also used.

Paintings produced with tempera painting technique are quite durable. The first known examples of the paintings made with this technique were found in the Fayum Portraits in Egypt, which were made in the

first and fourth centuries [4-9]. With the rise of Christianity in the Middle Ages, murals, altar boards, and icon paintings were needed. Frescoes were made for wall decoration, but altar panel paintings were also needed. Tempera was thought to suit this need and became an important tool for painters, especially in the middle ages [7, 10, 11].

Historically, art education started with practices in the atelier. In these practices, artists worked in a master apprentice relationship [1, 12]. According to this approach, it is necessary to first learn to draw. Michelangelo said that "A young painter spent one year alone for drawing, then he learned six years to grind colors, prepare panels and use gold leaf, during that time he continued drawing and had six more years to master the tempera pictures" [12].

In the Venice School in Medieval Italy the tempera technique was taught [13]. In the Siena School, artists frequently used the tempera technique in their works [14]. Giotto, who was one of the important representatives of the school, and other artists produced works with tempera painting technique [15]. Another important school is the Novgorod School, known for tempera and murals between the thirteenth and sixteenth centuries in Russia. Artists leaving this school guided the artisans that came after them and helped form the of Russian Art Scene by influencing the Greek Theophanes attached to the Byzantine art traditions [16]. Similar approaches in practices were used in Northern Europe, Asia and Africa [12]. Tempera was one of the most used techniques in the Renaissance period. Famous Renaissance painters such as: Gentile da Fabriano, Fra Angelico, Paolo Uccello, Masaccio, Fra Flippo Lippi, Domenico Veneziano, Piero Della Francesca, Andrea Del Castagno, Jean Fouquet, Carlo Crivelli, Giovanni Bellini, Andrea Mantegna and artists like Raffaello Sanzio applied the tempera painting technique in their works.

In the middle of the nineteenth century, the interest in tempera technique was reintroduced in Europe and has become increasingly popular with its increasing use by various artists today. After the nineteenth century, artists who worked with the tempera technique include: William Blake, T. Charles Sims, J. Edward Southall, Christiana J. Herringham, Ben Shahn, Peter Hurd, Andrew Wyeth, Robert W. Milliken, George Tooker, Altoon Sultan, Doug Safranek and Andrew Grassie. Tempera continued to be taught as a painting technique in fine arts and design schools established in various European countries and cities.

Tempera was also used by some artists in Turkey in the twentieth century. For example Zafer Gençaydın often uses contrasting colors and is known for his abstract paintings; He uses the tempera technique in some of his works because he uses fast brush drives and it "fits his nature" [17]. According to Türkyılmaz [18], Ergin İnan, who learned tempera technique at the Academy of Fine Arts Munich, is another artist who also uses the tempera technique in his works.

In recent years, various studies have been conducted by academic and independent researcherson the tempera painting technique, especially in Europe. There are many studies examining the place of tempera painting technique in contemporary art. For instance, researchers [19-30] examined in detail, how various 19th-century painters used tempera as an artistic expression. Jones [31] explored the contributions of Christiana Herringham on the "revival" of tempera painting in early 20th century England in a historical and cultural context.

Kinseher [32] examined the place of tempera painting methods and techniques in art education in the twentieth century in her article "Tempera Teaching at the Beginning of the 20th Century". She also mentioned the technical differences of teaching in some countries and schools in his article. According to research carried out in Turkey, the tempera technique and examples of it's use in art works have been found. In Yörükoğlu's [33] master thesis, the icons in the Edirne Bulgarian Church were examined from various aspects (subject, composition, color, content). In this thesis, the tempera technique that is used in icons is briefly mentioned. Beyoğlu [34] gave information about the understanding of art in the Medieval and Early Renaissance Period and examined examples of works made with the tempera technique in this period. Ateş [17] mentioned in his article that Zafer Gençaydın used the tempera technique in his works because it was suitable for his style of work.

In Beyhan's [35] article, he studied the application processes of paintings made with tempera and oil in Western art from the Early Renaissance Period to the first half of the nineteenth century. He also examined the use of the tempera technique in America after the twentieth century. Cebrailoğlu [36] in his master thesis, examined the history of some techniques applied in the art education process and the tools and equipment used. In this thesis, it was concluded that the use of various painting techniques and materials in art education has positive effects on both art education and the artistic development of individuals. When the studies of the subject are examined, it has been observed that studies in which the definition of tempera technique and examples of works were given in particular. However, there has been quite a limited number of studies on the rediscovery or use of technique after the nineteenth century. In addition, research has not been found on the use of tempera technique in undergraduate level painting courses or its applied teaching.

Today, re-interest in the tempera technique is increasing. The place of the technique in the history of art is introduced by teaching oral and practical lessons in various schools in America and many other

countries [7, 24, 29, 32]. In Turkish universities, only a few Departments of Art Education teach the tempera technique to students and in many of these universities, the technique is not taught sufficiently. In this study, the problem of the research is to examine how students who had no prior knowledge of tempera technique used this technique as a form of artistic expression, after they had learned it. The aim is to make findings about the tempera technique obtained as a result of theoretical explanation and practice.

2.   RESEARCH METHOD
In this part of the study, explanations about the design of the research, working group, data collection tools and data analysis are included.

2.1.   Research pattern
In this study the "case study" pattern, which is one of the qualitative research methods, was used. Merriam [37] defined the case study pattern as "an example, intense, holistic definition and analysis of a phenomenon or social unit" [38]. This research design, which started to be used in educational researches after 1980, enables a detailed and descriptive analysis of one aspect of the subject being researched [39]. In addition, this research pattern can be used "to define and see the details that make up a situation, to develop possible explanations about a situation and to evaluate a situation" [40].
In this paper there are several research questions, they are:
a.   What is the pre-knowledge level of the students who take painting course about tempera technique?
b.   For the students who take the Painting course, regarding the tempera technique;
   1) How do they explain their experience after the oral presentation process?
   2) How do they explain their experience after the implementation process? Ersoy [41] constitutes the problematic state of the research. In order to collect the data and literature review, I Semi-structured interview and II. Transcripts of the semi-structured interview were used.

2.2.   Working group
Qualitative research generally focuses in depth on a purposefully selected small sample and a single situation [42]. Yıldırım and Şimşek [43], as the case studies are an in-depth and detailed research method, mentions that the number of participants should be reduced. Thus, the questions focused on the study so it can be better illuminated. Based on this knowledge, the working group criterion sampling strategies were determined by the criterion sample type. The purpose ofcriterion sampling is to review and examine "situations that meet criteria of predefined importance" [43]. The participants of the research are eight students studying in Bursa Uludağ University, Faculty of Education, Department of Art Education in the 2018-2019 academic year. Participants of the study were selected on a voluntary basis and the participants were given code names by the researcher.

2.3.   Data analysis
In the process of analyzing the research data, "thematic analysis" was used. According to Patton [42], the inductive analysis approach involves "the discovery of patterns, themes and categories in the data". According to Glesne [44], the researcher in thematic analysis focuses on analytical techniques to search for themes and patterns within the data. In this analysis method, it is desired to show the relationship between coding and what the researcher is researching. After the data is coded the same encoded data is read and that code is used to find out what it is in essence. This research was carried out in I and II. semi-structured interview forms that constitute the main data source of the study.
According to Patton [42], interviews, which area data collection technique through verbal communication, and is a basic qualitative data source. In this study, semi-structured interviews, which are thought to contribute more to the research by giving more answers to the research questions, are the main data source. For this research; two semi-structured interview forms were prepared and were examined by experts in the university and the questions were finalized after some arrangements were made.

2.4.   Limitation of the study
In this study, during the 2018-2019 academic year, a group of eight participants who took the Painting Course at the undergraduate level at Bursa Uludağ University, Department of Fine Arts Education in Bursa, where given one theoretical lesson and five lessons of practice; within a six-week activity period. with the data collection tools used in the study, it is limited to the thematic analysis of the obtained data.

3.   RESULTS AND DISCUSSION

In this section, the findings regarding the problem status of the study are given. As a result of the thematic analysis, the themes of "Preliminary Knowledge About Technique", "Formation After Oral Presentation" and "Formation After Artistic Practice" were obtained.

"Preliminary Knowledge about Technical" theme consists of "History", "Technical Knowledge" and "Artwork and Artist Knowledge" categories. In this theme, the participants; "Preliminary Knowledge about Technical" data about tempera technique and artists whose artwork was made with this technique are explained.

"Formation After Oral Presentation" theme consists of "History", "Artwork and Artist Knowledge" and "Awareness Formation" categories. During the theoretical explanation process, it was planned to give general knowledge about tempera technique, resource research was made anda presentation was prepared for this purpose. The presention at gave definitions of tempera examples from different sources. Itsuse in the early ages, middle ages, Renaissance and after the 19th century was examined under four titles along with examples of artists and artworks. In this theme after the theoretical explanations, the participants; the changes in the tempera technique, "Artwork and Artist Knowledge" and the thoughts on the technique are explained.

"Formation After Artistic Practice" theme consists of "Surface Preparation", "Paint Preparation", "Paint Consistency", "Change of Thought" and "Awareness Formation" categories. This theme, which is after the implementation, involves the preparation of the wooden board and tempera paint which explains the technical changes tothe participants.

3.1.   Preliminary knowledge about technical

"Technical Knowledge" category, participants' preliminary knowledge and opinions about the tempera technique are included. The data obtained in this category seek answers to the first research question. This category consists of "Misconception", "Lack of Knowledge" and "Incorrect Knowledge" codes.

When the data obtained was examined, it was observed that the participants had a misconception. Gülçin said in relation to tempera: *"I remember that it is used in frescoes"* (1. semi-structured interview [SSI]). Zuhal also confused the preparation of tempera paint with the fresco technique; *"I heard that the tempera technique is a technique made using wet plaster and paint materials."* she said (1. SSI).

When the data obtained under the code of "Lack of knowledge" are examined, it is striking that the majority of the participants did not have any prior knowledge of the technique. The findings are as follows: Betül knows that only eggs are used *"I have no knowledge, except that a material such as egg and egg whites are used."* She stated: (1. SSI). Ezgi; *"I think it is made with egg whites."* (1. SSI). This is incorrect. When the data are examined, it is noteworthy that the vast majority of the participants do not have prior knowledge about the technique. The findings are as follows: Ezgi; *"The paint is applied dry."* (1. SSI). Göksu *"I heard that it is a paint that takes a long time to dry. However, I do not have clear knowledge"* (1. SSI).
Other participants said, *"I don't know the tempera technique."* (1. SSI) used the expressions.

"History knowledge" category examines the participants' preliminary knowledge about the history of tempera technique, artists and works of art. With the data obtained in this category, it was used to answer the first research question. The category consists of the "lack of knowledge" and "Incorrect knowledge" codes.

"Lack of knowledge": Hatice, who gave opinions about the use of tempera technique in the historical process said *"I know that it is the technique used in works made in the Medieval and Renaissance periods."* (1. SSI) said. Other participants stated that they did not have knowledge about the history of the technique.

In the data obtained under the code "Incorrect knowledge"; Betül; *"I do not know the artist working with tempera. I don't remember if the works were shown in the course."* (1. SSI), Hatice *"Obviously, I have no clear knowledge"* (1. SSI). Ezgi, Göksu, Gülçin, Ufuk and Zuhal answered *"I don't know"* (1. SSI). When the data obtained was examined; it was seen that not all participants had prior artwork and artist knowledge with tempera technique.

The "Preliminary Knowledge about Technique" theme is important in terms of having an idea about the participants' tempera technique. When the data obtained was examined; it was seen that not all participants had prior artwork and artist knowledge with tempera technique.

3.2.   Formation after oral presentation

The "History" category consists of "Continuity of Technique" and "Permanence of Works" codes. The opinions of the participants whose "Continuity of the Technique" code is reached are as follows: Rana, *"Well-known artists used this technique.But there are artists using it today."* (2. SSI). Zuhal; *"In fact, many famous artists have used it andthis technique has been used since ancient times"* (2. SSI). Ezgi *"continues to be used since the early ages"* (2. SSI). Betül; *"I learned that it has been used since the first centuries after AD"* (2. SSI). Ufuk *"like a tradition that has been going on for thousands of years."* (2. SSI). Göksu; -used similar expressions that it was used for many years as *"Oil painting is a widely used paint and painting*

technique before tempera is used" (2. SSI). Gülçin; *"In other words, in the paintings of some caves in the first centuries, this technique was used and still used in the twenty-first century. Even in the nineteenth century, related associations are being established. People are starting to use this technique again. Today, there are many artists who use this technique..."* (2. SSI). Seven of the respondents stated that the technique has been used and continues to be used throughout history with short answers. One participant explained in detail what he learned about the history of the technique.

As a result of the findings obtained, the code of "Permanence of the Works" has been reached. Gülçin; *"The tempera technique was used in the early ages with Fayum Portraits. The paintings on the walls of the cave are also included in this technique. These examples are still existing. In fact, this is very important"* (2.SSI). Ufuk's views on this issue; *"When we look at permanence, there are many works that have survived thousands of years ago. We can see them in museums. Thanks to these visual sources, we can be in the history of art."* (2.SSI). Other participants used similar expressions and expressed their opinion that the technique was permanent for many years.

The "Artwork and Artist Knowledge" category obtained as a result of the findings of the interview after the lecture consists of the codes "Use in the 1-5th Centuries", "Use in the Middle Ages", "Use in the Renaissance" and "Post-18th Century Use."

For "Use in 1-5th centuries" all participants stated the following about the technique in the second interview: Betül; *"The examples that caught my attention were the Fayum Portraits in Egypt. These portraits were made in ancient times, in the 0 AD–200 AD. I found out where tempera was used especially in the works. For example, I heard about the Fayum portraits before. But I did not know with whichtechnique these portraits were made."* (2. SSI). Zuhal; *"There were Fayum Portraits, which are thought to belong to the Roman Period, made in the third century AD. They were made with the tempera technique. They caught my attention."* (2. SSI). Gülçin; *"Tempera technique was used in the First Century, in the Fayum Portraits in the 1st century. This technique is also included in the paintings made on some cave walls in India..."* (2. SSI). When the expressions of the participants are examined; it was observed that the most remarkable works together with examples of use in the early ages were the Fayum Portraits.

When the data was examined, it was observed that all participants stated that the tempera was the most widely used painting technique in the Middle Ages with different expressions. The findings are as follows; Ezgi; *"During the Middle Ages, most artists used this technique. For example, Cimabue used this technique. His work called 'Santa Trinita Madonna' remained in my mind. Then he used this technique a lot with gold leaf in Giotto."* (2. SSI). Göksu; *"Since it was the most used painting technique before oil painting, in fact, most artists used this technique in the middle ages. I can use Giotto as an example of this."* (2. SSI). Gülçin said that *"In the middle ages, most artists worked with the tempera technique... But the Lorenzetti Brothers remained in my mind about the artists using the technique."* (2. SSI). Hatice; *"...has been used by various artists from the early ages to the middle ages and from the middle ages until today. For example, the Lorenzetti Brothers used this technique in the middle ages."* (2. SSI). Betül; stated that *"...Piero Della Francesca's Duke and Duchess of Urbino"* (2. SSI). Rana; *"I know that is the most used technique in the middle ages. Fra Angelico is on my mind about it."* (2. YYG. 2). Ufuk; *"I know the historical development of the tempera technique in the first place. I learned how intensive and how much it was used in the middle ages between the 13th and 15th centuries. Apart from that, there are icons and figures of Jesus Christ..."* (2. SSI). All of the participants stated that the tempera was the most used technique in the middle ages and they gave examples from different artists and works.

"Use in the Renaissance" code has been reached as a result of showing the artists and works of the Renaissance period in the expressions used by the participants in general. The findings are as follows. Gülçin; *"There are so many names. There are so many works. For example, Boticelli's Birth of Venus, and then Mantegna's "Lamentation of Christ" was made with the tempera technique"* (2.SSI). Zuhal *"Boticelli has works by Mantegna with this technique."* (2. SSI). Ezgi; *"The fact that Mantegna's Lamentation of Christ was made with this technique attracted my attention."* (2. SSI). Göksu; *"I remember that the Birth of Venus was made using tempera."* (2. SSI) they said. Hatice and Rana mentioned the Botticelli's Birth of Venus painting with similar expressions with other participants. Ufuk gave a different example; *"For example, Ucello has a very well-known work. The Battle of San Romano at the Uffizzi Gallery. That work was also made with tempera."* (2. SSI).

"Use After the 18th Century": During the interview, different participants were asked to name the use of the technique after the 18th century; they gave examples such as Ben Shahn, Andrew Wyeth, George Tooker, Picasso, Reginald Marsh, Otto Dix, and Peter Hurd.

Betül *"There are a lot of artists and works. Andrew Wyeth's work with very realistic portraits. Also, the Chess Game with colorful tiles on the floor attracted my attention."* (2. SSI) said. Ezgi; *"Picasso was working using tempera. Then Reginald Marsh used Otto Dix or similar tempera."* (2. SSI). Göksu used the expressions, *"For example, Otto Dix used this technique in his works"* (2. SSI). Gülçin: *"There was Otto Dix.*

Even Picasso did a few had to work. There was even one portrait work that we saw in the narrative. The technique was used a lot by the artist'. So a lot actually used the artist." (2. SSI). Hatice *"20th Century, important artists such as Otto Dix and Andrea Wyeth used this technique. An important artist such as Andrea Wyeth used the tempera technique..."* (2. SSI). Ufuk: *"Remaining in my mind, Andrea Wyeth has a figurative work sitting in the green flat grasses (Christina's World) ... and Peter Hurd's tempera artwork."* (2. SSI). Zuhal said, *"The works and colors used by Ben Shahn are very impressive."* (2. SSI).

"Awareness Formation" category; data was obtained as a result of the interview findings after the narration with the participants of the research. It consists of "Lack of Technical Knowledge", "Interest in Technique Change" and "Formation of Learning Request".

Findings obtained in the "Lack of Technical Knowledge" code are as follows; Gülçin: *"...The tempera technique is not mentioned in our lessons on art history. It is not explained too much, but she mentioned many artists. I was very surprised by the fact that it was Picasso used this technique. So many artists used this technique. I noticed this and I was interested in it."* Göksu stated their lack of knowledge in the past *"For example, I knew Otto Dix, one of the 20th century artists. But I did not know that he used the tempera technique. I noticed this."* (2. SSI). Hatice used different examples, *"For example, I had heard about Fayum Portraits before. But I did not know that tempera technique was used in those works. There are also Botticelli's paintings. For example, I did not know that they were tempera. I realized that I did not have enough Knowledge."* (2. SSI). Ezgi said *"Obviously how I learned. I knew it was only done on the wall but now I understand the tempera technique."* (2. SSI). Zuhal said, *"For example, we know Mantegna as an artist. We see his works. But I never thought he used the tempera technique in his works. I thought he did the painting of the Birth of Venus in Botticelli with oil painting, but I did not see it."* (2. SSI). When the data obtained in the research were examined, the participants stated that they had previously seen the works made with the tempera technique but they had not known what painting technique was used.

When the data obtained was examined, the participants stated that there was a change in their interest in the tempera technique. Betül said: *"For example, I knew and liked Andrea Mantegna's Lamentation of Christ. But I did not know that it was made with this technique."* (2. SSI). Ezgi said, *"...So I started to think whether it is still used today. In fact, it was not only used in the past... We have seen this with many examples of works and artists"* (2.SSI).

Hatice said, *"Obviously there was a change in my interest. I saw the tempera technique in many pictures I never noticed before. I thought all of them were oil paintings. After theoretical explanation, I saw that most of the paintings we know and have usedtempera. So I can say that my interest in the technique has increased."* (2. SSI). Ufuk's spoke about his change in interest; *"When you look at old paintings, you have an idea about how works can be produced or how they can be applied. On the other hand, you can apply them as a modernized art. This is interesting."* Zuhal said, *"...I mean, I was a little biased because I had never heard of tempera. I thought it would be an unnecessary application. Nobody has taught me about it until this day. I was thinking that if nothing had been done before today, nothing would have happened. Later; I learned that many famous artists used this technique before and there are still many artists who use it. Why shouldn't we use it? In other words, both my prejudice was changed and it allowed me to see it from a different perspective."* (2. SSI).

The theme of "Formation after oral presentation" after the lecture the participants is important to determine their knowledge levels of the tempera technique. Such as the most remarkable works of the Renaissance era, Boticelli "The Birth of Venus", Mantegna "Lament of the Dead Jesus", Ucello "War of San Romano". Many artists made the use of the technique after the 18th century and attracted the attention of the participants, artists such as: Ben Shahn, Andrew Wyeth "Christina's World", George Tooker's "Chess Game", Picasso, Reginald Marsh, Otto Dix, and Peter Hurd attracted the attention of the participants.

3.3. Formation after artistic practice

To the "Surface preparation" category the findings obtained after the application were reached as a result of this category. It consists of "Painting surfaces" and "Gesso preparation and Application to the panel" codes. "Painting surfaces" When the data obtained from the research is examined, the participants expressed their opinion as to the application of tempera on different surfaces. Ezgi spoke on this subject; *"Actually, I understand that the technique can be applied on many materials. For example, it can be applied on the wall or on the canvas. We applied it to the wooden panel. We worked and understood well…"* (2. SSI). Betül; *"We used wooden panels. But we can use this technique by applying gesso on plywood"* (2. SSI). *"They were preparing the painting surfaces by sticking the wood side by side. We also used wooden panels. It was ready. But they can also be used on canvas or other surfaces"* (2. SSI) stated that different painting surfaces such as wooden panels can be used.

The preparation of the painting surface Ezgi; *"There are many stages of wood preparation. We first notched the panels of wood to absorb the glue. Then we melted the bead glue and applied it to the panels. We*

waited for the glue on the panel to dry for around three hours. Then we heated the glue on the container again. We glued it to the panel one day and we waited for it to dry for one day. As it dried, we folded it again. After the panel has dried, we sanded it. We had a more beautiful, hard surface on the canvas at last..." (2. SSI).

Gülçin and Ufuk explained the process with similar expressions as Ezgi. Rana explained about this process in more detail; *"First of all, we apply the glue that we prepare with natural materials on the wooden panels. There is a type of fabric on it like linen. We lay this fabric on the panel. We then dipped the glued water on the wooden panel. Then we add chalk powder to the glue water until it is in a certain consistency. This will not be a very dense consistency; we need to pay attention to it. We need to apply six layers in this way. After applying each layer, we have towait for it to dry. But it dries very quickly. I had a lot of fun and was curious. Then to smooth the rough parts awaywe sanded"* (2. SSI). Also on the preparation of Rana gesso; *"In addition, the gesso we have prepared for this panel is a very durable material… I have tried to work it once. I thought Gesso surfacewas broken but it was solid. I guess it would have dissipated if we used something other than chalk powder."* (2. SSI).

"Paint Preparation" category was reachedas a resultofthe findings obtained after the application with the participants. It consists of "material knowledge" and "paint consistency" codes.

"The Material Knowledge" the statements of the participants about the tempera picture materials are as follows. Rana; *"It is easy to prepare the paint. I prepared it in the same way as gouache acrylic is prepared. I put the pigments of allcolors on the palette. I drop the binder mixture with the egg yolk on them and create the paint. In other words, I created the colors separately, and at the same time. It was so easy"* (2. SSI). Ezgi; *"First of all, the paints in the colors we want are prepared with pigments, alcohol, eggs and a little water. It can be made using only egg yolk or using whole eggs. It is usually made on wood."* (2. SSI). Betül, Göksu, and Gülçin mentioned the use of eggs, water and vinegar in sentences similar to Ezgi. Unlike other participants, Göksu also stated that the paint dries quickly. Ufuk, for the preparation of paint, said, "*You use egg whites or yolks. By mixing vinegar or wine and water into it, you get the paint by mixing the powdered paint or pigment with the egg mixture."* (2. SSI). He also mentioned the use of alcohol or vinegar in Zuhal.

"The paint consistency" code. Based on their experience, Betül said, *"While learning this technique, we prepared each material by ourselves. But it is necessary to prepare the consistency of the paint well. Because if we put the egg, vinegaror water a little more or less, the consistency of the paint may change. It is necessary to prepare it carefully."* Göksu said: *"I think we have to be very careful. Because it will not be a dark, wateryand concealing paint. It may take several attempts to get the correct balance."* (2. SSI) used the expression. Similar to Göksu, Zuhal said, *"So the liquid we prepared with that egg should not be used much. For example; When using watercolor, a lot of water is used. But the tempera is different. Because the paint gets thinner, than the base. Pigment should be used equally. Because it gives better results."* (2. SSI). Participants' common views on the amount of material used was that it can affect the consistency of the paint and draw attention.

"Change of Thought" category, in the code on "Surface Preparation" the findings of the participants regarding the changes in their thoughts regarding the preparation of the painting surface are included from the data obtained after the application. Betül; *"It was a good experience to start something from the beginning as we did every stage byourselves and by trying it ourselves first"* (2. SSI). Göksu said; "*This preparation phase was beautiful. It was very fun and I really enjoyed it. So, one feels like one really does something."* (2. SSI). Gülçin stated that she found it *"…fun and interesting"* (2. SSI). All three participants expressed the change in their thoughts on surface preparation. Ezgi: *"I understand how to work on wooden panels now."* (2. SSI). Hatice: *"I had looked at the internet a little before I told you about the application. But there were always things about paint preparation. Even if the wood surface was used, there was no preparation. So it was surprising and enjoyable to prepare our painting panel. What I did not know before surprised me when I learned later."* (2. SSI). Rana said that they enjoyed the experience: *"I can say that the preparation of the wooden panel was fun for me. I enjoyed doing it. SoI will prepare five more."* (2. SSI). Ufuk: *"It was enjoyable that part. I liked it. It was sandpaper, it was lining, it was gesso... It is also remarkable that it is wood because it is a natural material."* He also talked about the effectiveness of using natural materials. *"It would not be nice if we bought and made the materials. Because at that time, I would think that if I make a mistake, I would buy a new one… I was very busy preparing my painting surface. I had to do something good. Therefore, I think it is very niceto do it step by step. If you do it with effort, the results will be better."* (2. SSI). He talked about the difficulties and beauties of the wood painting surface.

Under the code on the technique, the data obtained from the participants after the application related to changes in thought about tempera technique are included. Betül: *"I was skeptical at firstabout how it would be because I had no knowledge of the technique. I was excited. I was a little timid. I believed I could do it. But then, as I learned the technical knowledge, I believed that I could do as I saw the examples made. It*

was a good work. It was fun to learn a new technique and try it for the first time." (2.SSI). Ezgi said: *"...Most importantly, I got to know the paint. My interest in the technique has increased. In the future, I started to think that I can create a texture on my canvases by applying the tempera paint a little drier. I can paint on it again."* (2. SSI). Göksu said: *"I was always wondering when I heard the name of the technique, but I did not have any idea about it". After doing it, I want to do more things with tempera I have a desire to work by mixing them with oil and watercolor."* (2. SSI).

Rana, Zuhal and Hatice stated that their interest in technique has increased and more willingness to practice has occurred. Unlike other participants Ufuk said; *"I had a curiosity at first, but I learned that it is a very different application. It is applied completely with brush strokes; it needs to be more careful. It requires a little more effort than oil and acrylic paint. You may not get bright, luminous color. But when you look at the works that remain until today; maybe a more permanent, long-lasting picture. When we consider these changes, it is actually a workable painting technique."* (2. SSI).

"Awareness formation" category, the code "About art history" after the application, the findings of the participants regarding the awareness formation about art history are included. Hatice; *"There were many changes in my thoughts about the technique. As a result of the application, my interest increased. Because I changed my view of the old works. I saw that there was a lot more labor in theworks than I thought... We are lazy because we buy our paints and canvases. Therefore, there was an interest in painters working in tempera in art history. Now, when you tell us about this, there is an awareness. I am looking at the work of Andrea Wyeth with more respect because I learned the tempera technique"* (2. SSI). Zuhal: *"For example, after learning the technique, when I looked at the works of important artists in the history of art, I thought that they were made with oil painting. I did not know that it was made with the tempera technique. I know the technique now and I know how trouble some it is, I wonder how they could have worked in such detail. Actually, it increased my awareness in the sense."* (2. SSI).

Göksu: *"I thought about how it was hard-drying paint before painting with the tempera technique. I thought how long ago the artists had done their work. After applying the technique, my thoughts changed completely. I started to think about how the artists in the history of art have done such detailed work. I wanted to improve myself about the technique after practicing. I was more fascinated by the artists working in tempera in the history of art. I think it is enjoyable even if that production is challenging."* (2. SSI) stated that their awareness about artists working with tempera technique in art history has increased in detail. Rana: *"I knew the artists, but I had no idea how they applied it that way."* (2. SSI). Betül; "*When I saw the examples after theoretical explanation and application, I learned that very detailed works could actually be done."* (2. SSI) stated briefly the awareness of art history. The findings of the participants with the application code are created to raise awareness about the application after the activity.

Ezgi: *"...I thought it was applied only on the wall. But I understood that it could be applied on different materials. I think it can be used nowadays. When I look at the studies, I saw that some painters worked with bristle brushes one by one. When I did it myself, I learned how they work better"* (2. SSI). Göksu: *"...I thought it was drying too hard, but it was drying very quickly. And I thought it was made only with egg white. I was interested in doing everything very carefully. Because we, students, usually take the ready canvas and start painting. We don't know the preliminary preparation. I saw that the preparation and application of the paint was different from our studies with tempera"* (2.SSI). Hatice, Betül and Rana also stated that, with similar expressions, other participants have increased their awareness of the practice. Participants stated that they learned that tempera paintings were made on wooden panels in the early ages, but that different painting surfaces can be used today. In addition, the participants stated that there were many changes in their thoughts and they had requests for more applications because they had wrong or incomplete knowledge about tempera technique.

4.   CONCLUSION

Findings obtained; Bursa Uludağ University, Department of Painting and Art Education, Painting Course students learn that the tempera painting technique benefits them in various ways. For this reason, tempera technique can be used theoretically and practically in painting courses in the Department of Painting and Art Education. Thus, students will be able to use tempera technique as an artistic expression form, increase their awareness and gain professional benefits through experiences about works produced with this technique in the history of art.

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