

Can Art Studio Courses Be Carried Out Online?

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Abstract: *This study aimed to explore preservice teachers' opinions regarding face-to-face and online studio courses during the COVID-19 pandemic. In this study basic qualitative research design was used. The research participants included 12 preservice teachers studying in the department of art teacher education of the education faculty at a university located in Türkiye. The study data were collected through an interview form consisting of open-ended questions, and these data were analyzed through inductive content analysis. Research results included the positive/negative opinions of face-to-face and online education processes, comparison of these two processes, effect of the face-to-face and online processes on artistic skills as well as subject and material usage. According to the research results, it was determined there were more positive experiences regarding face-to-face education of the studio courses, while negative experiences regarding online education became apparent. It was also determined a majority of preservice teachers preferred face-to-face education for studio courses. Therefore, it can be stated there were more positive experiences towards face-to-face education in terms of artistic skills as well as subject and material usage.*

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1. Introduction

To decrease the spread of COVID-19, educational instruction throughout much of the world quickly shifted to online education (Moser et al., 2021). In the face of the adverse conditions caused by the pandemic, online education has been seen as lifesaver worldwide (Gülleroğlu & Coşkun, 2023). In Türkiye, the decision was made to close all universities after March 16th, 2020, and online education be instituted to maintain uninterrupted instruction (Council of Higher Education [CHE], 2020). As a result, almost all courses were offered through online education regardless of educators' preparedness. Therefore, the adaptation of universities to online education, achieving course efficiency and attainments, along with the advantages/disadvantages of online education were investigated. With the transition to online education, problems occurred in terms of students, instructors, accessibility, student motivation, academic topics, student expectations, and demographic characteristics (Aboagye et al., 2020).

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Additionally, issues arose in terms of interaction between teachers and students (Oliveira et al., 2021). It has also been reported that instructors at higher education institutions experienced various challenges in online teaching processes during the pandemic (Svihus, 2024), and that online education may have increased educational inequalities (Frohn, 2021). Past studies addressing the advantages of online education have been carried out, and as a result, it has been stated that the COVID-19 pandemic provided opportunities to introduce online learning (Pokhrel & Chhetri, 2021), not only to better prepare for future crises, but also for educators and students to have greater flexibility (Ronkowitz & Ronkowitz, 2021). Importantly, online education also shows potential advantages such as access to larger student groups, responding to students' individual needs, flexible management of content (Goldschmidt et al., 2010), ease of archiving, and a reduction of program costs over the long term (Leszczyński et al., 2018).

However, there is also another important discussion regarding online education: Applied courses. Online education is the process of individuals conducting learning activities at their own pace and in a flexible environment, without being bound by location or time (Karabulut Coşkun & Çetin, 2022) and this process has given rise to questions about how to conduct practical lessons that are typically held in specific times and locations. With the COVID-19 pandemic, it was discussed whether courses could be taught via online education in faculties such as medicine, conservatory, and the arts, which all offer applied courses in environments such as laboratories and studios (Kahraman, 2020). These discussions placed emphasis on the physical and psychomotor actions used by students in applied courses as well as their opportunities to collaborate in person (Nortvig et al., 2020). Applied courses, which include practice-based teaching, require students to work with materials. Depending on the field of study, applications such as laboratory studies, clinical research, and artistic endeavors are necessary. Thus, students are expected to apply theoretical knowledge within a real-world environment, evaluate these applications, along with reviewing their work according to any progress made in learning (Torrens University, 2018). However, as a result of online education taking place in a virtual environment away from studios and laboratories, this necessitates applied course content as well as teaching-learning approaches to be adapted for online use. In previous studies, when appropriate materials are available, applied courses have been shown to be effectively conducted online as well as students' skills improve over time (Nortvig et al., 2020; Wragg, 2020). For example, when a basic applied design course is conducted online, it can be successful (Kahraman, 2020) as well as provide material-rich social constructivist education (Wragg, 2020). On the contrary, it has also been reported conducting applied courses via online education can cause difficulties such as being unsuitable for effective practice (Adedoyin & Soykan, 2020), cause limitations in achieving outcomes (Oliveira et al., 2021), inability to reach attainments (Caglayan, 2021), not gaining sufficient experience, and teachers experiencing difficulty guiding students (Bingöl, 2020). At some universities in Türkiye, at the COVID-19 pandemic outset, it was decided to conduct applied courses online in fields such as medicine, dentistry, and art education. This decision was later changed and applied courses were again carried out face-to-face. Discussions about making these decisions quickly was important to not only determine course effectiveness but also contribute to future education management. Particularly, curiosity occurred about conducting face-to-face versus online education in courses such as painting, sculpture, and drawing which incorporate live models. This is because these courses often take place in interactive studio environments where master-apprentice and teacher-student relationships occur. Importantly, studios are a place of practice and learning as well as a place which enables imagination, exploring alternatives, and developing a critical perspective (Goldschmidt et al., 2010; Jones et al., 2022).

1.1. Studio Education as an Applied Course

Studio education is a process designed to be constructivist, applied, and participatory, in which students are actively engaged in a creative process that supports their learning (Sawyer, 2017). Studio is a fundamental part of the curriculum in most design and art disciplines (Goldschmidt et al., 2010). It is organized to include the equipment and technical materials appropriate to achieve the aim and content of the course (lighted drawing table, mobile stool, easel, modeling table, metal-wood cutting machine, carving tools, casting materials, linoleum and engraving printing press, etc.). The studio course most often includes theoretical and practical portions for at least three hours per week over one semester. In the first instance, the theoretical and conceptual aspects of the subject are taught by instructors who are experts in the relevant field. Studio courses begin with practical work under the guidance of a teacher, with students first making sketches and then beginning a design and project. Students sometimes display their work in the studio environment as well as are expected to explain and critique not only their work but also that of their peers. In this way, the goal is that students learn by doing (Goldschmidt et al., 2010). In studio courses, subjects can be explored by both students and instructors, along with students' conversations about their projects, time, instructors, and resources (Jones, 2022). Studio experiences enrich students' cognitive, affective, and psychomotor skills through theoretical and practical activities. They are also an interactive process where students create original syntheses. These experiences can be either planned or unplanned as well as pervasive and implicit (Jones, 2022).

Studio courses in the art teacher education undergraduate program focus in many skills such as creating two- and three-dimensional original studies that take into account art elements and design principles and the relationship between form and content, creating personal visual language by trying different techniques and materials, and developing competence of three-dimensional shaping (CHE, 2019). In studios designed for this purpose, a flexible environment is created where students make decisions, experiment, take risks, and sometimes fail. Students may at times have difficulties in learning, yet through this process, instructors can realize this and guide students in learning (Goldschmidt et al., 2010; Sawyer, 2017). Therefore, studio education provides a versatile educational opportunity that offers students formal and informal learning experiences, where interaction with both instructors and peers is intense (Charters & Murphy, 2021). The meta-analysis by Corazzo (2019) strengthened this assertion, defining art, design, and architecture studios under six themes as well as characterizing them as spaces where works are produced, bridges created, meaning produced, experience and interaction enabled, background provided for learning, and identity formation fostered. This study showed that a studio's material space makes up part of the learning process. However, due to maintaining social distance during the COVID-19 pandemic, students' face-to-face interaction was minimized (Charters & Murphy, 2021; Fleischmann, 2021). Thus, discussions occurred at the university where the present research was conducted about how to conduct applied courses while also maintaining social distancing. So, applied courses such as painting, sculpture, graphics, pattern, and basic design were conducted online after the pandemic emerged, yet later returned to face-to-face education due to the limited interaction occurring through studio courses. This is important because interaction is an important facet of applied course studio learning. Additionally, due to the studio courses being held through programs such as Zoom and Microsoft Teams, students were not required to turn on their cameras, which also adversely affected interaction. Another problem was not working with a live model, which is often part of studio courses. For example, in first-year drawing courses, students are asked to create compositions based on a live model using elements and principles such as line, form, ratio-proportion, light-shadow, movement, integrity, and balance (CHE, 2019). There was a live model in the face-to-face studio course where the research was conducted. As a result, during

face-to-face education, students do figure drawing by looking at a live model, while the instructor guides them in developing a creative drawing language. However, in online education, only theoretical information about concepts such as line, ratio-proportion, light-shadow, movement, and balance was explained through sample studies. Students were also given homework to practice based on live model observation, yet due to students lacking a live model, it was difficult for them to apply what they had learned, and the practice step of studio education was incomplete. This situation was also valid in painting and sculpture studio courses. The primary art studio painting and sculpture courses in the undergraduate art teacher education program include content such as students using different techniques and materials along with developing the ability to create a visual language that suits their own tendencies (modeling, carving, casting, low and high relief, etc.) (CHE, 2019). However, in online education, these practices were insufficient due to a lack of materials and equipment found in the studio environment and limited guidance from instructors. Therefore, while instructors had difficulty in realizing studio course attainments during the pandemic, students stated experiencing anxiety and stress completing online design projects (Amro, 2022; Lee, 2021; Marshalsey & Sclater, 2020). For example, in a study conducted in Türkiye by Buyurgan and Demirel (2022), negativities in the learning environment were identified such as observing student development, using materials, providing feedback, and the process of producing artistic products in applied art courses offered online during the pandemic. Therefore, the results of the present research were important they can help answer questions related to what extent attainments were achieved in studio courses, whether online education was suitable for applied studio courses, and whether online education was useful in studio courses during emergency situations.

Importantly, future online education will go beyond solely providing traditional instruction, and instead create bridges between social classes, remove age barriers and local borders, along with popularizing lifelong learning (Kini-Singh, 2020). Furthermore, courses can be enriched through software and virtual environments used in creating art (Dilmaç, 2020; Wragg, 2020). In this context, revealing the current situation in distance learning and face-to-face studio courses in art teaching along with exploring and comparing these different approaches can shed light on these discussions. As can be seen, studies have already been conducted regarding online education during the pandemic period, but an insufficient number of studies have been conducted which compare applied courses. In this context, the present research was aimed at exploring student opinions regarding their experience with both face-to-face and online courses during the COVID-19 pandemic.

2. Method

In this study basic qualitative research design was used. Basic qualitative research is concerned with how people interpret their lives, construct their worlds, and give meaning to their experiences, and the aim of such research is to understand how people understand their lives and experiences (Merriam, 2009). In this context, this research examined the experiences and lives of students in face-to-face and online studio courses provided through an art teacher education department of a state university in Türkiye. Following the decision by the Turkish CHE to follow COVID-19 protocol measures and close universities after March 16th, 2020, online education was then provided by all universities. Therefore, online instruction began on March 30th, 2020; however, during the subsequent semester, on September 09th, 2020, face-to-face applied courses for art teacher education students resumed. These students chose one of three primary art studio courses, such as painting, sculpture or graphics, starting in their second year. Whereas applied courses, such as drawing and basic design studio took place during the first year. During their undergraduate education, art teacher education students received practical training through studio courses. For example, students take two- and three-

dimensional elective studio courses (painting, sculpture, graphics, and printing) in addition to their main art studio courses. In this context, the present research was aimed at exploring students' opinions regarding their experiences in face-to-face or online studio education. To accomplish this aim, answers were sought for the following questions:

- What are the experiences of preservice teachers regarding face-to-face and online studio courses?
- What are the experiences of preservice teachers regarding the effect of instruction type on artistic skills, subject, and material usage in studio courses?

The participants were 12 preservice teachers studying art teacher education at a state university in Türkiye. In qualitative research, purpose- and inquiry-based approaches are utilized instead of statistical formulas in determining sample size (Patton, 2002), reaching saturation is the basis for data collection (Malterud et al., 2016), and depth is more important than breadth (Boddy, 2016). Accordingly, in the present research, these conditions were considered when determining sample size. Furthermore, long-term interviews were carried out to obtain in-depth data.

Information regarding study participants is presented in [Table 1](#). Participants took part in online studio courses during the spring semester of the 2019-2020 academic year and in a face-to-face studio environment during the fall semester of the 2020-2021 academic year. In basic qualitative research, data are collected through interviews, observations, or document analysis (Merriam, 2009). In this research, data were collected through interviews held between January and February, 2021, using the Microsoft Teams online platform. Data were collected through a semi-structured interview form developed by researchers and included eight open-ended questions. The interview form included questions to determine preservice teachers' experiences in face-to-face and online education, effects of each instruction type on subject selection, material usage, and artistic skills as well as which approach was more effective for studio practices. Informed consent was obtained from participants prior to collecting data. The first author interviewed each participant once, and interviews took 45 minutes on average. Interviews were recorded, and the audio recordings were transcribed by the first author. Additionally, the second author checked the transcripts for errors to ensure correctness. The data were analyzed through inductive content analysis. In this context, transcripts were first coded, then related codes combined to form themes and subthemes. Furthermore, the second author performed analysis using MAXQDA12, and the peer examination method was used for analysis reliability. In this regard, the first author examined the codes, themes, and subthemes, and then presented her opinions. The analysis was concluded when agreement was reached regarding codes, themes, and subthemes.

Ethical permissions were obtained from Çukurova University Scientific Research and Publication Ethics Committee for the Field of Social and Human Sciences (Date: 30th April, 2021, Number: E.91043).

Table 1. *Information Regarding Participants*

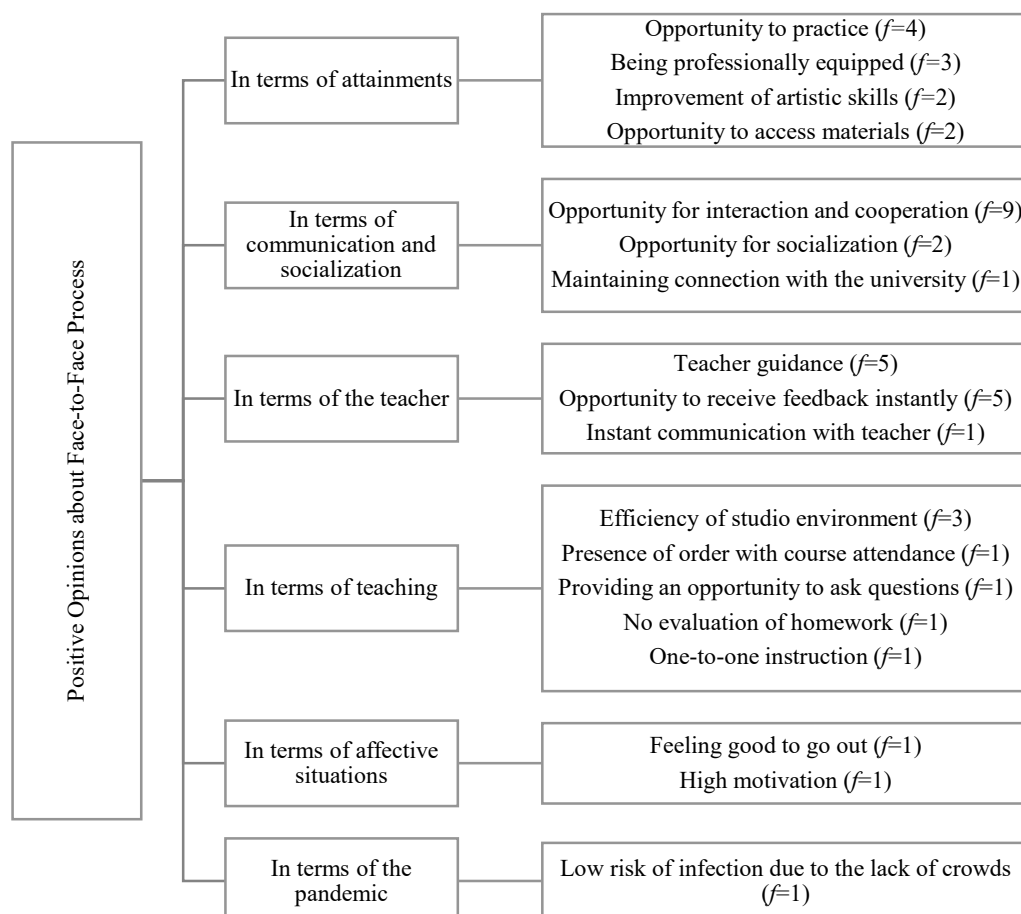
Participant Code	Gender	Year	Primary Art Discipline	Location of Participation in Online Education	Technology Used to Connect to Online Education
S1	Female	4	Painting	Dormitory	Smartphone
S2	Female	3	Sculpture	House	Computer
S3	Female	3	Sculpture	House	Computer
S4	Male	3	Sculpture	House	Computer

Table 1. *Information Regarding Participants (continued)*

Participant Code	Gender	Year	Primary Art Discipline	Location of Participation in Online Education	Technology Used to Connect to Online Education
S5	Male	2	Painting	House/Workplace	Smartphone
S6	Female	2	Painting	House	Smartphone, Computer
S7	Female	4	Graphics	House	Computer
S8	Female	4	Painting	House/Dormitory	Smartphone
S9	Female	2	Painting	House	Smartphone
S10	Male	2	Painting	Dormitory	Smartphone
S11	Male	2	Sculpture	House/University	Smartphone
S12	Male	3	Graphics	House	Smartphone, Computer

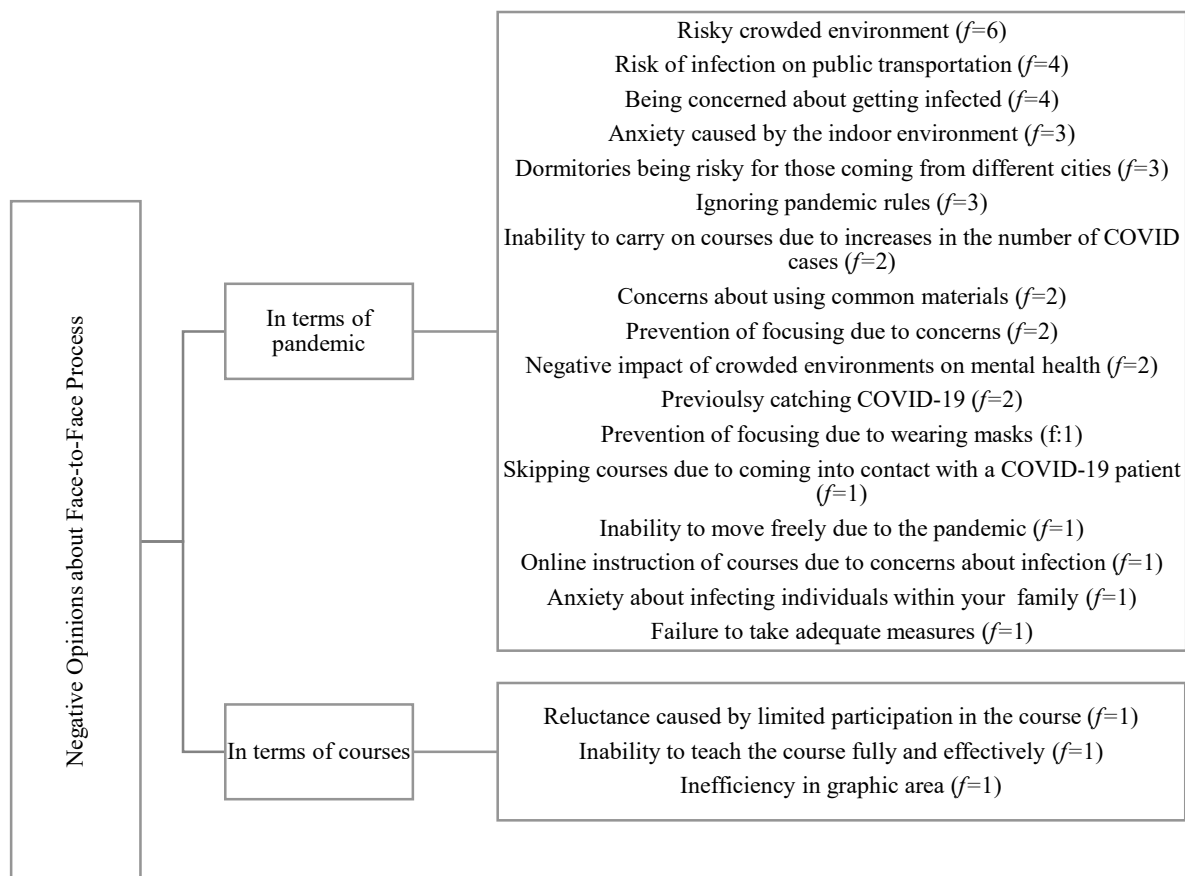
3. Findings

The findings of this study were primarily gathered according to two headings: Positive or negative opinions regarding face-to-face or online education for studio courses during the COVID-19 pandemic. Next, the comparison of face-to-face and online education, the effect of face-to-face and online processes on artistic skills, and content and material usage were analyzed. Positive opinions regarding face-to-face education for studio courses are presented in Figure 1.

Figure 1. *Positive Opinions about Face-to-Face Process*

As seen in Figure 1, it was determined that participants' opinions were mostly presented in terms of attainments, communication and socialization, teacher and teaching within the scope of positive themes regarding face-to-face education. Furthermore, there were opinions in terms of affective states and the pandemic. Related to attainments, the opportunity to practice was mentioned the most, while in terms of communication and socialization, interaction and cooperation opportunities were mentioned the most. As for teachers, statements about teacher guidance and opportunities to receive immediate feedback were emphasized. About course teaching, opinions regarding the efficiency of the studio environment were presented most. Among the opinions for this theme, the opportunity for interaction and cooperation was most frequently mentioned. For example, S12 stated, *"In some studio courses, students need to be present in the studio. It is not enough to take part in an activity with a distant point of view, without being in its kitchen. This is like seeing food that a chef cooks in the kitchen right beside the chef and seeing food on the screen, so we cannot involve ourselves in the course properly"*. Negative opinions regarding face-to-face education for studio courses are presented in Figure 2.

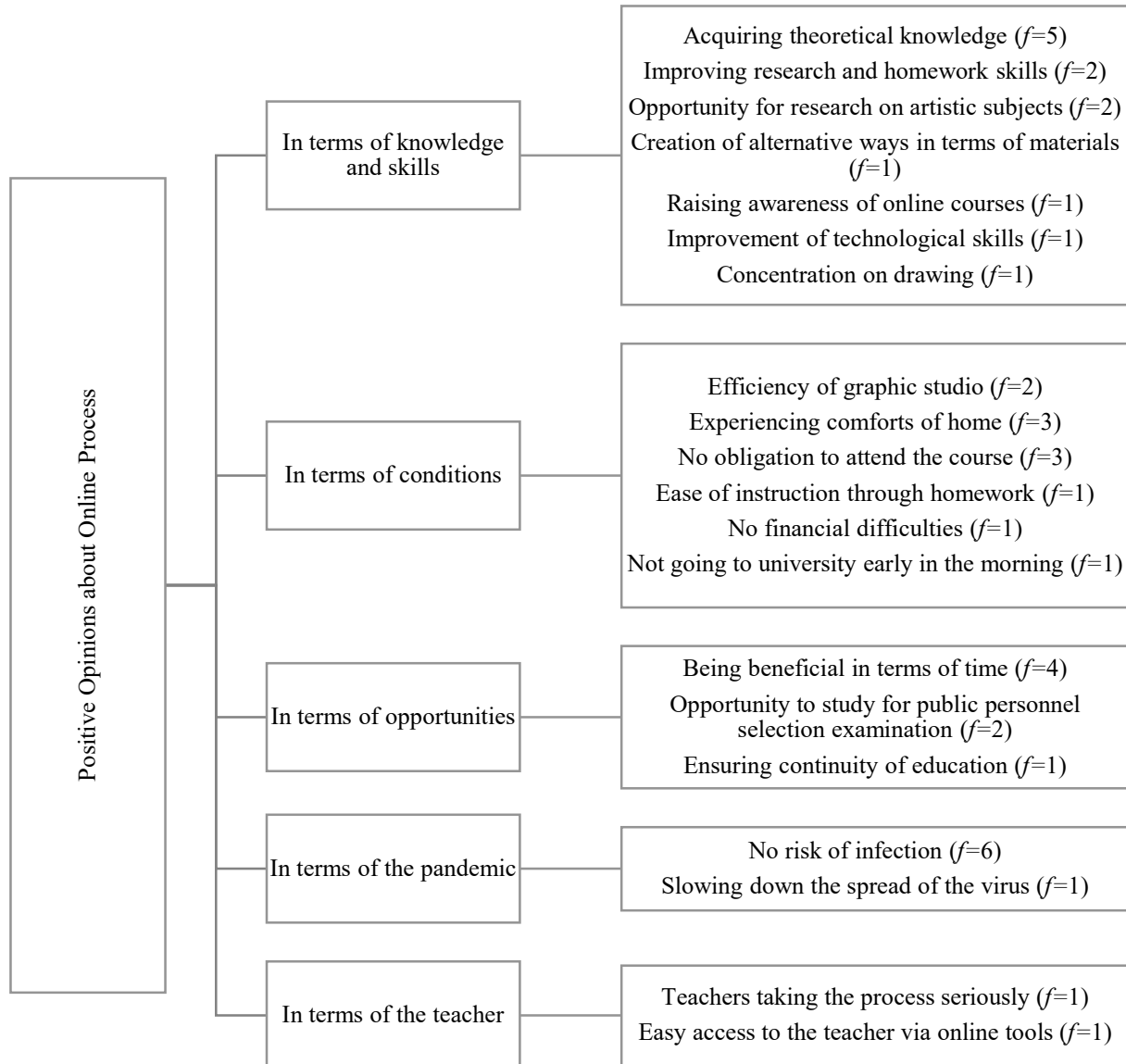
Figure 2. Negative Opinions about Face-to-Face Process



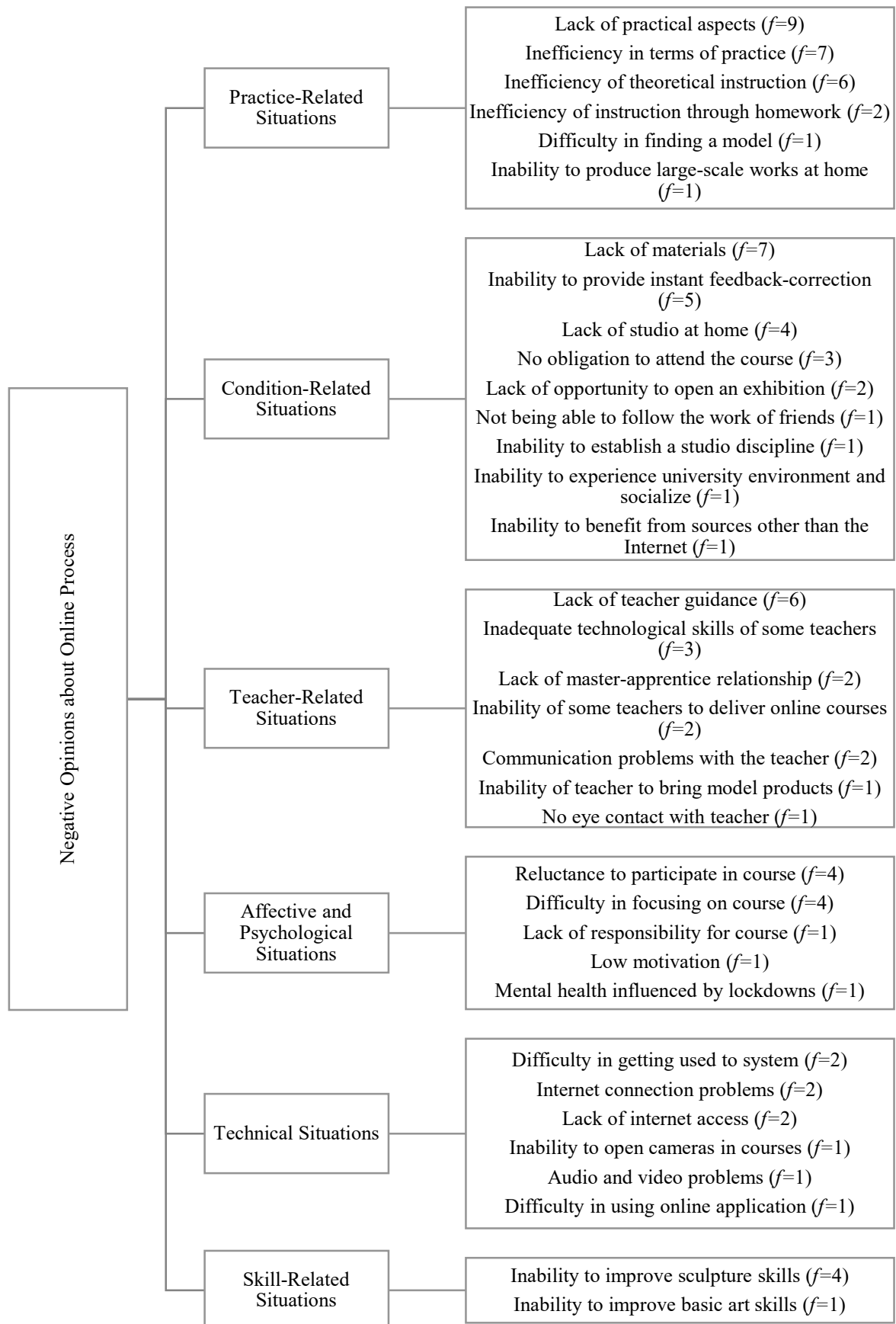
As seen in Figure 2, participants mostly expressed negative opinions regarding the COVID-19 pandemic about face-to-face education. For example, regarding the pandemic, negative opinions such as the risk of crowded environments and contamination on public transportation were mostly expressed. Besides, it was mentioned that a closed environment causes anxiety, that the dormitories are risky for those coming from different cities and that pandemic rules are ignored. Moreover, negative opinions about the courses were presented, such as S10 stating, *"We use buses, we get into vehicles, we get into public transportation, together with other*

people. So, not only being at the university but also the process of coming to the university poses a risk". Positive opinions regarding online education of studio courses are presented in Figure 3.

Figure 3. Positive Opinions about Online Process

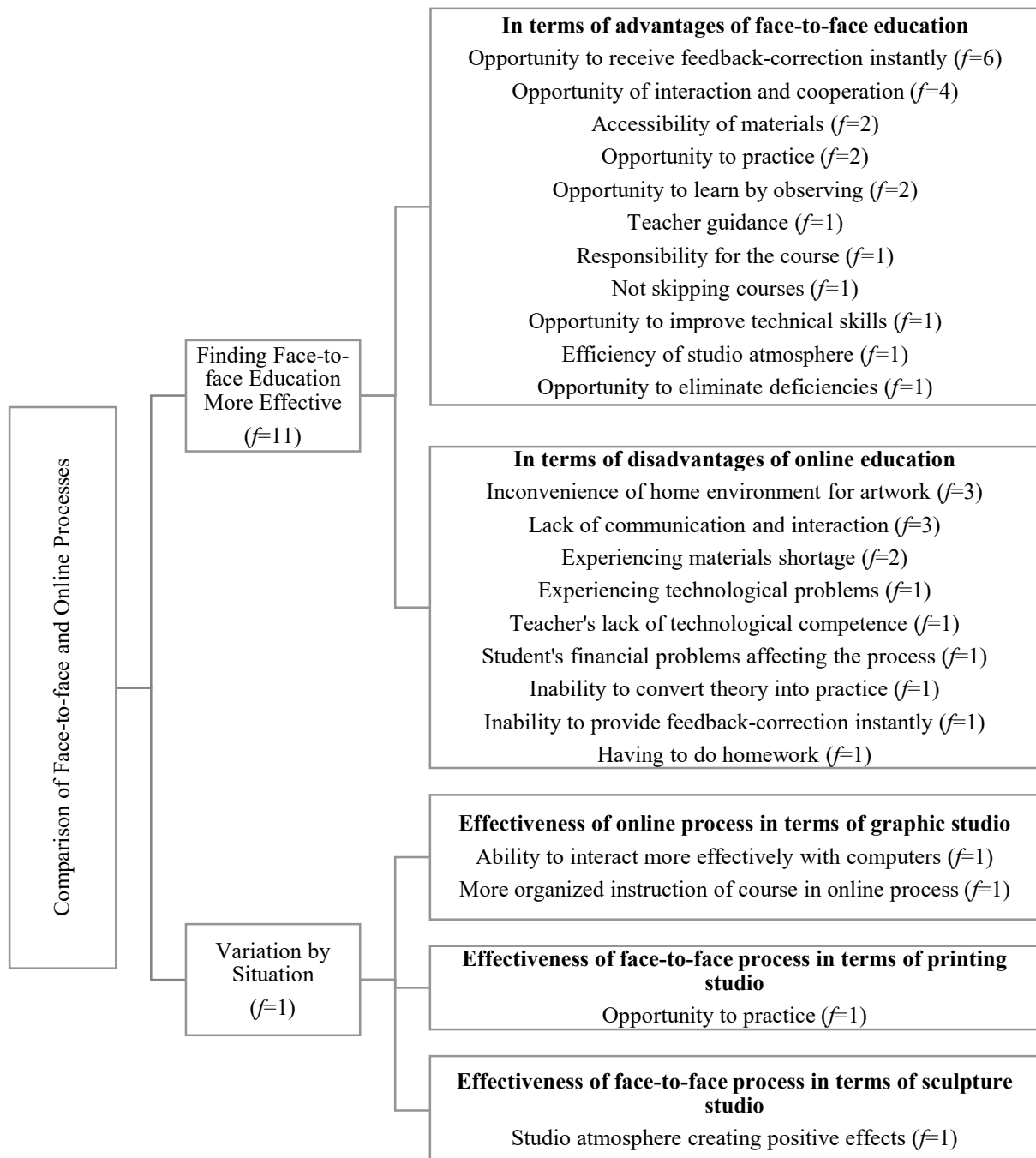


As shown in Figure 3, participants mostly expressed positive opinions in terms of knowledge, skills, and conditions. Additionally, they expressed opinions regarding opportunities, the pandemic, and the teacher. Within the scope of this theme, opinions were mostly about acquiring theoretical knowledge, not risking infection, being beneficial in terms of time, and not having to attend courses. In this sense, S5 stated, *"I think online education provides us with a little more theoretical knowledge"*. Negative opinions regarding online education of studio courses are presented in Figure 4.

Figure 4. *Negative Opinions about Online Process*

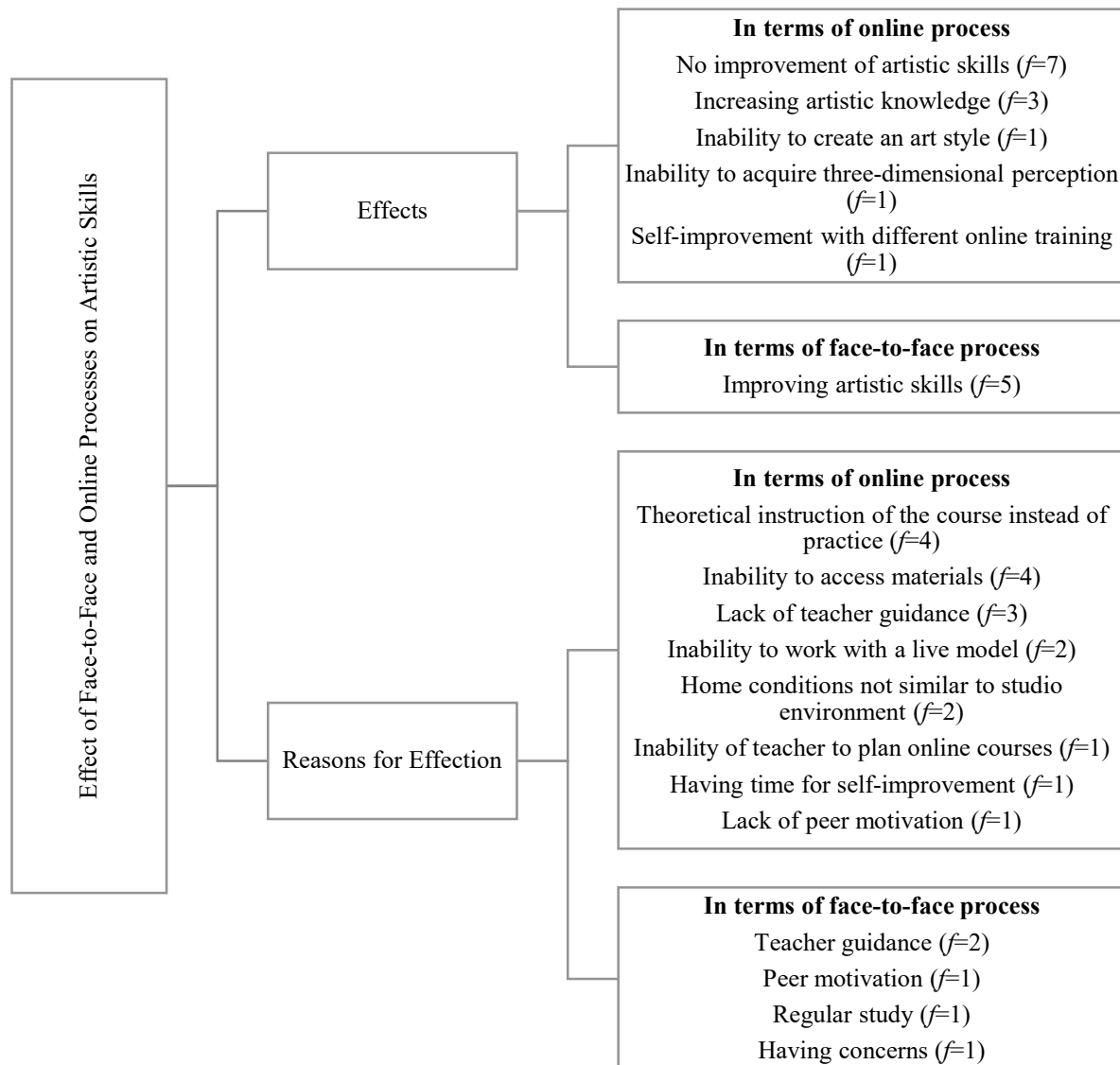
Participants' negative opinions regarding online education of studio courses included practice-related situations, conditions, teachers, affective and psychological issues, technical and skills related situations. There were primarily negative opinions such as lack of practical aspects, material and teacher guidance, inefficiency of theoretical instruction, in terms of practice, and inability to receive instant feedback-correction. For example, S2 stated, *"For example, we draw something or do homework. If we learn face-to-face, the teacher can take a pen in hand and can say 'do it like this,' can show a technique or say what we have done wrong. But we cannot do that on so much on the Internet"*. Participants' opinions about comparing face-to-face and online education of studio courses are presented in Figure 5.

Figure 5. Comparison of Face-to-face and Online Processes



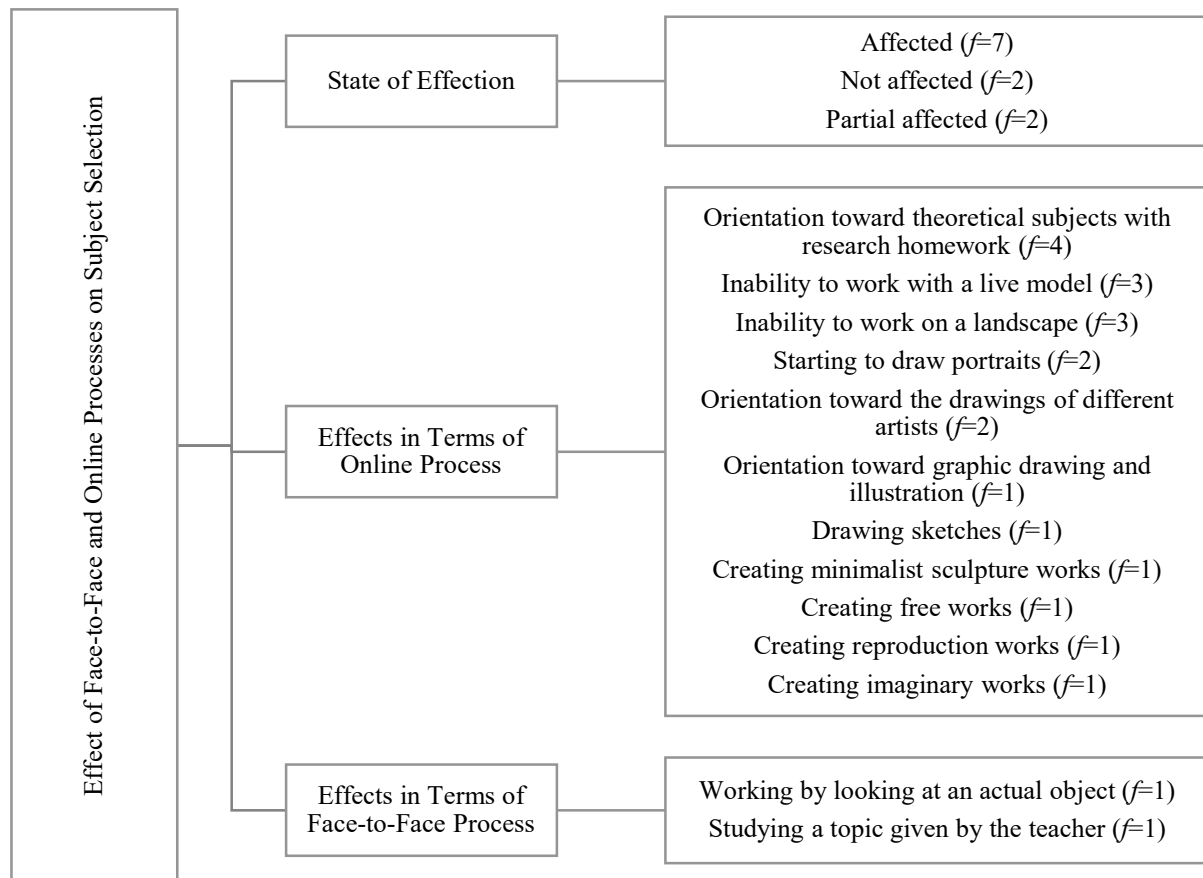
There were 11 participants who stated they found face-to-face education of studio courses more effective than the online education approach, while one student emphasized their effectiveness differed according to the situation. The opinions of participants who found face-to-face education more effective coalesced according to two sub-themes: Advantages of face-to-face education and disadvantages of online education. In this context, the opportunity to receive immediate feedback-correction as well as interaction and cooperation opportunities which occurred in face-to-face education were mentioned most. Additionally, regarding online education, some participants stated their home environment was not suitable for artistic work, and there was also a lack of communication and interaction. Regarding variation in this situation, a student stated face-to-face education was more effective in terms of printing and sculpture studio courses, while online education was more effective in terms of the graphic studio course. In this respect, S6 stated, *“About environment, that is, in terms of working environment, none of us have a studio at home”*. Furthermore, S10 stated, *“Studio instruction affects us better in terms of seeing each other’s level and techniques and adding different things to ourselves. We see each other’s mistakes and always criticize each other’s mistakes”*. Opinions regarding the effect of face-to-face and online education on artistic skills are presented in Figure 6.

Figure 6. *Effect of Face-to-Face and Online Processes on Artistic Skills*



All participants stated the education approach affected their artistic skills as seen in Figure 6. It was mostly stated online education did not improve their artistic skills, while face-to-face education did help them improve. Within the scope of their reasoning, it was most often expressed that when the course was taught theoretically instead of practically, not reaching the studio materials and not receiving teacher guidance were the major drawbacks of online education. Whereas teacher guidance was available in face-to-face education of studio courses. Regarding this, S2 stated, *“Since everything is ready in the studio environment, we only focus on improving ourselves, which adds a plus to our artistic skills. When we are at home, we must think about everything. Nothing is ready, we think more, I think it saves the day rather than improving it”*. Opinions about the effect of face-to-face and online education of studio courses regarding subject selection are presented in Figure 7.

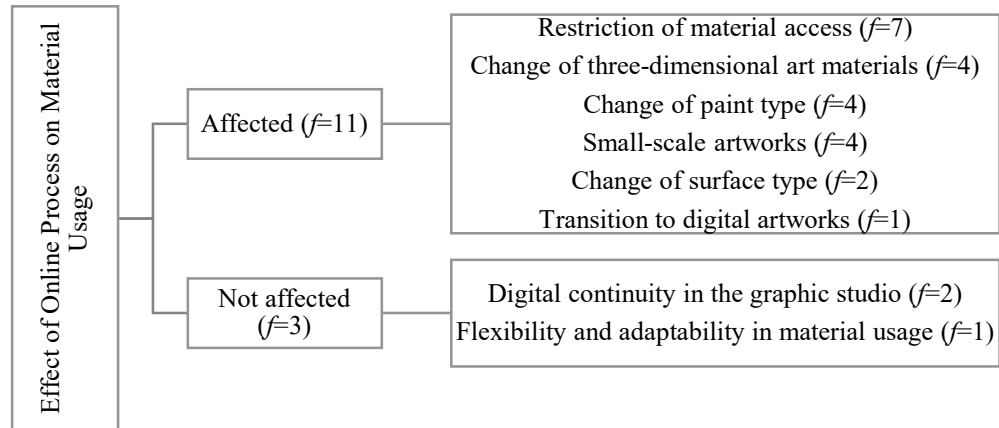
Figure 7. Effect of Face-to-Face and Online Processes on Subject Selection



Concerning the effect of face-to-face and online education of studio courses on subject selection, seven participating students stated the education approach did affect them, while three students stated they were not affected, and two students stated being partially affected regarding subject selection. Participants who stated they were partially affected explained this situation as less artistic work being completed through online education. Also, students who stated their subject selection was not affected explained this situation as being due to the quality of the graphic studio as well as the fact that the subjects of interest did not change. For example, as seen in Figure 7, participants who stated they were affected mostly mentioned situations such as turning to theoretical issues in research assignments as part of online education, along with not being able to work with a live model. Regarding this theme, S11 stated, *“In the online process, it turned a little more into an imaginary drawing or copying a work by an artist”*.

Participants' opinions about the effect of the online process on material usage in studio courses are presented in Figure 8.

Figure 8. *Effect of Online Process on Material Usage*



In regard to the effect of online education of studio courses on material usage, eleven students stated the education approach did affect them, while three students stated they were not affected. As can be seen in Figure 8, restriction of material access as a result of online education was mentioned most frequently regarding this theme. In addition, change of three-dimensional art materials, paint and surface type, small-scale artworks and transformation to digital artworks were mentioned. In the opinions that the online process does not affect the use of materials, graphic studios were emphasized, and the continuity of digital artworks was mentioned. Besides, flexibility and adaptability in material usage were also mentioned. Regarding this theme, S1 stated, *"While I was previously transferring my work to larger surfaces, onto canvas, my works now remain in my sketchbook, I worked on small things, I worked with a single material due to having limited materials"*. However, it has also been observed that this situation encouraged students to attempt using new and unconventional materials. For example, S5 stated, *"If we were in the studio, we would probably do the work with clay or different materials, now we are thinking about what can be done at home. Maybe sculptures can be made from different materials like a pet bottle, cotton, and organic materials"*. As a result, it can be said this situation leads students to find suitable solutions to existing problems along with seeking out new ways of working.

4. Discussion

The aim of this study was to explore student opinions regarding both face-to-face and online education of studio courses conducted at a state university located in Türkiye during the COVID-19 pandemic. Findings can be categorized according to two headings: Positive and negative opinions regarding studio courses conducted through either face-to-face or online education during the pandemic. Ultimately, it was determined that the face-to-face education of studio courses contributed positively to students in terms of providing more practice opportunities, interaction, cooperation and socialization, teacher guidance, and instant feedback. It was also observed the facilities and atmosphere of learning face-to-face within a studio positively contributed to enriching students' learning as well as increasing their motivation. Whereas the online education of studio courses contributed more to students gaining theoretical knowledge, research-homework experience, and exploring different materials. Besides, it also provided advantages in terms of factors such as improving

technological skills and reducing negative effects of the pandemic on students. Previous COVID-19 studies have similar findings regarding the positive results of face-to-face versus online education. For example, face-to-face education enriches interaction between teacher and student (Oliveira et al., 2021), students can receive rapid feedback from instructors (Mohammed et al., 2021), leads to greater motivation (Simamora, 2020), and contributes to the creative process due to the physical access to campus facilities (Marshalsey & Sclater, 2020). While, positive aspects of online education are expressed as protecting the health of students and instructors, along with providing more flexibility and originality (Krauss & LaRiviere, 2022; Mohammed et al., 2021). Moreover, positive aspects such as changing the perspectives of teachers and students regarding how to create designs and presentations through digital methods and social media as well as gaining technological experience (Amro, 2022; Wragg, 2020) have been proven.

In fact, there are long-standing beliefs that hands-on courses such as studio instruction and design classes cannot be taught online, such that interaction and hands-on learning are often the highlight of one's design education experience (Fleischmann, 2021). For example, in Marshalsey (2021), some art students compared the lack of interaction and campus access in online education to a brick wall, and also stated that reviews, ideas, and inquiries they made about their work from peers through face-to-face art classes are as valuable a teaching resource as an instructor. This is actually a remarkable finding which demonstrates the importance of interaction. A similar situation was recognized in the present research results. For example, some students compared the studio environment to cooking in a kitchen and stated that participating in practices remotely was insufficient and that peer critiques of their work were extremely beneficial to their development. Various studies have also shown that team-based and cooperative learning contribute positively to the development of creative skills (Le, 2023). Studio instruction is traditionally considered a 'visually and materially unique' collaborative learning space in art education, where students and teachers interact socially through creative practices (Charters & Murphy, 2021; Marshalsey & Sclater, 2020). As a result of transition to online education, the loss of traditional studio education was immediately felt (Jones, 2022).

However, online education has provided students with improving technological skills, gaining different experiences, discovering different materials, and adapting their designs, which will likely be a greater consequence in 21st century art education (Wragg, 2020). Significantly, the findings of the present research also showed some students improved their drawing abilities by exploring online programs instead of using paper as well as experimented with colors and drawings techniques they had never dared use before. Instructors also developed new methods to make their courses more suitable for online education (Wragg, 2020). Therefore, it can be stated online education led to improvements in the innovation and problem-solving skills of both educators and students (Kini-Singh, 2020), while also encouraging them to break from traditional approaches to learning. Furthermore, this study determined online education of studio courses provided flexibility and time savings to students. This result coincided with the findings of previous studies (e.g., Eroğlu & Kalaycı, 2020; Simamora, 2020; Wragg, 2020), which report students can study freely without restrictions related to pressure from the classroom atmosphere and course duration, which provides time savings that can be used for other activities.

Both educational approaches were reflected upon negatively to some extent by all participating students. For example, having face-to-face education of studio courses negatively affected them physically and psychologically, especially due to managing the pandemic experience. While, in online education, the studio course included more theory/homework, less practice, difficulties in obtaining materials, changes in teacher guidance and interaction, problems in participation and focus, and technological inadequacies which negatively affected students.

Students emphasized their difficulty focusing on online courses, which according to Simamora (2020) can cause anxiety and mental stress. There have also been studies, like the one in this study, that talk about students reporting that they were confused about how to apply them because they could not practice them by observing them closely, as in a face-to-face course (Amro, 2022; Simamora, 2020). For example, in a traditional studio environment, being in same place at same time is an integral aspect of studio education (Jones, 2022). This reminds us of the perceptual experience of being together in same time and space along with the relationship between human body and object (Merleau-Ponty, 2005). For example, the perceptual experience which occurs as a result of seeing and sensing an object within a two-dimensional virtual environment such as online education is different from the perceptual experience that occurs in the three-dimensional physical space of face-to-face education. This is dependent, according to Berger (2012), on what we see being affected by where and when we are, as well as our position in time and space. The nature of artwork, like objects of perception, is to be seen and heard, and although definitions and analyses are valuable in a later accounting of experience, they cannot replace the one-on-one perceptual experience of the artwork (Merleau-Ponty, 2005). As a result, Merleau-Ponty and Berger's opinions support the idea that explaining a subject in a two-dimensional virtual environment such as online applied art classes, showing and talking about the art object is merely describing it, which is insufficient to make art. The art student should instead experience and feel the third dimension of art objects by seeing, walking around, and touching the object within a space such as a studio where she/he is present in full body and mind. Therefore, a physical studio is needed to teach tactile skills through specialized equipment needed in art education (Fleischmann, 2021). Additionally, it has been stated that in online education, the physical, material, and social aspects of learning within an actual studio, which act as a catalyst for creative practices, are lost, and as a result, make it difficult to interact with materials and translate this learning into a virtual space (Charters & Murphy, 2021). Furthermore, various problems have been identified, such as difficulty in explaining and conveying creative ideas regarding artistic practices and production of works, and lack of understanding of textures, colors, and size of works (Marshalsey & Sclater, 2020). In this study it was revealed the absence of physical conditions such as studios in the home environment experienced through online education negatively affected students' artistic skills. Equipment such as printmaking tools and three-dimensional printing machines important in artistic work were absent, and art students felt inadequacy in learning a subject without access to appropriate materials; for example, with access to studio facilities being cut due to the pandemic, it is clear access to physical spaces is critical (Kini-Singh, 2020). Therefore, students' inability to actively practice as in face-to-face education, negatively affects their ability to develop creative work (Marshalsey & Sclater, 2020). Besides, in choosing a subject, theoretical knowledge sometimes leads to situations such as focusing on research assignments and less on artistic work or small-scale work. Therefore, students' artistic skills were negatively affected because they were unable to consistently create artwork as they would in face-to-face education.

However, it was shown through the present research findings that the online experiences of graphics studio students were more positive than those of students in other art fields. For example, these students stated using the computer more effectively through online education, communicated more effectively, and that their studio courses were more productive. Clearly, fields such as graphic design are less dependent on a physical studio and can work with a blended approach through online education due to already using online and computer-based programs (Fleischmann, 2021). Graphic design students tend to research and develop ideas on the impact of images, text and symbols within contemporary media on design, and create designs by way of computer-aided programs using creative and effective visual communication (CHE, 2019). Therefore, they seemingly require less of a studio environment than other more

hands-on branches of art such as painting or sculpture. For this reason, the effect of online education may differ, especially in art programs which rely more on the use of technology.

These results also revealed the reflections of students about conducting courses online within physical studios including interaction, equipment, and materials. Additionally, it revealed the role of the studio as a material space, especially in faculties such as art, design and architecture, which include applied courses. Although it has been emphasized that studio courses which require artistic skills cannot be carried out entirely online (Caglayan, 2021; Fleischmann, 2021; Marshalsey & Sclater, 2020; Wragg, 2020), online education has experimented with which elements work best in studios. Of course, there remains a need for activities that increase interest, motivation, focus, and ensure interaction and collaboration within the online process. However, students' experiences have shown the COVID-19 pandemic changed beliefs that studio courses cannot be conducted online and has in effect opened the door to online studio practices. Therefore, online education can be used especially in the theoretical aspect of studio courses or to create designs using technological tools, but also provides students and instructors with time savings and work flexibility. Also, it is important to better determine how online processes affect students' learning. Furthermore, studies to determine how instructors' teaching approaches are affected by the changes resulting from online education as well as what changes can be useful.

5. Conclusion

The importance of being physically present with peers and teachers in the studio environment, to learn by doing and interacting, was determined in this study. This was determined to be so due to face-to-face studio courses positively contributing to students in terms of cooperation, socialization, and teacher guidance. It was seen that studio facilities and atmosphere have a positive contribution in enriching the learning of the students and increasing their motivation to work.

In the online studio courses, the lack of a studio within their home limited students' artistic production in some respects. Thus, in online studio courses, students completed more research assignments, focused on theoretical subjects, produced less artistic products and created smaller sized artworks. Additionally, it caused students to identify different materials instead of relying on materials normally found in face-to-face education. Students did develop their technological skills, gained new experiences, and expanded their designs by discovering diverse materials through trial and error. Furthermore, online education provided students with greater flexibility and time savings.

However, when face-to-face and online education were compared, it was determined that the physical, material, and social aspects of learning face-to-face within a studio were lost during the COVID-19 pandemic due to instituting online education. However, these results were not the same for all applied courses within art teacher education. For example, the present research showed that online education for graphics studio students was more positive than for other art fields.

In conclusion, it was determined that art teacher education students had more positive experiences in face-to-face studio courses. While the negative health effects accompanying face-to-face education during the COVID-19 pandemic were highlighted. Whereas in studio courses conducted online, the most mentioned positive experiences regarded acquiring theoretical knowledge, time and space opportunities, and reduction of infection risk from COVID-19. Additionally, in online courses, the primary negative aspects were limited practice, lack of materials, limited teacher guidance, technical/spatial deficiencies, and emotional/psychological concerns. Therefore, when these two education types were compared, participants' opinions revealed studio courses were best conducted face-to-face. Finally, face-

to-face education also had more positive effects than online education regarding artistic skills development, subject selection and material usage.

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Ethics Committee Approval

Ethical permissions were obtained from Çukurova University Scientific Research and Publication Ethics Committee for the Field of Social and Human Sciences (Date: April 30th, 2021, Number: E.91043).

Conflict of Interest

The authors declare that they have no conflict of interest.

Contribution of Authors

Handan Narin Kızıltan: Investigation, Conception, Literature Review, Materials, Data Collection and Processing, Visualization, Writing. **Buket Turhan Türkkkan:** Investigation, Conception, Literature Review, Design, Data Analysis, Visualization, Supervision, Writing.

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