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Comparison of Digital Coaching Centers and Face-to-Face Coaching Centers in the Context of Shadow Education Institutions: Student and Teacher Perceptions and Academic Achievements of Students

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Comparison of Digital Coaching Centers and Face-to-Face Coaching Centers in the Context of Shadow Education Institutions: Student and Teacher Perceptions and Academic Achievements of Students

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Abstract: This article discusses the comparison between digital and traditional face-to-face coaching within the scope of shadow education institutions. While analyzing the differences and similarities between the two educational models, both their advantages and disadvantages are thoroughly discussed. In this context, interviews were conducted with students and teachers who receive education in both face-to-face and digital coaching, and the positive and negative aspects of both institutions, suitable and unsuitable courses, the future situation, and the effects on students' academic achievements were revealed. According to the results obtained from the research, it is noteworthy that students who do not receive education in digital coaching have prejudices against digitalization. Additionally, no significant difference was found between the academic achievements of students receiving education in digital coaching and those receiving education in face-to-face coaching.

Keywords: informal learning; computers in education; distance education and online learning; learning communities; mobile learning

1. Introduction

The term "shadow education institution" or "private cram school," which refers to an education system that allows students to take additional courses outside of their school curriculum, is particularly prevalent in some countries in Asia and the Middle East. This system is an education system that allows students to take additional courses outside of their school curriculum. Typically, students enroll in private cram schools with the aim of preparing for exams related to their school curriculum and enhancing their academic achievements (Dierkes, 2010).

The term "shadow education institution" is often used particularly for the illegal or unregulated activities of such institutions. However, in some countries, private cram schools have been officially recognized and registered. (Yu & Zang, 2022).

Digital cram schools have become an increasingly popular method of education in the present day. Compared to traditional cram schools, digital cram schools provide assistance to students online over the Internet. This method has become increasingly important, especially with the proliferation of distance learning systems during the pandemic (Helmefalk &Sell, 2020).

As traditional cram schools give way to digital ones, a new era has begun in student education. Digital cram schools assist students in their education online via the Internet and make the learning experience more accessible and personalized compared to traditional cram schools. However, discussions about digital cram schools also come with them. Some argue that digital cram schools are less effective than face-to-face education (Lin, 2020) while others contend that digital cram schools offer more opportunities for students (Bidari, 2021).

In the context of Cram Schools, digital tutoring or e-tutoring is becoming increasingly popular, as it enables students to receive education from anywhere, whether at home, work, or any other

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location, as long as they have an Internet connection and a device. How effective are these digital educational methods compared to face-to-face cram schools in terms of student academic achievement and teacher-student interaction? This article aims to compare digital cram schools and face-to-face cram schools in terms of student and teacher perspectives, as well as student's academic achievements, within the context of Shadow Education Institutions. The results of this research will help to identify the strengths and weaknesses of both digital and face-to-face cram schools and assist in making better decisions for the education system and students.

1.1. Objective and Significance

Digitalization has also affected cram schools, which constitute a significant part of the education sector, and the foundations of a new formation called digital cram school have started to be laid. It has been observed that there is a lack of research on what digital cram schools are, their content and scope, and their impact on student's academic achievement. This study is expected to contribute to the literature as one of the studies that contribute to the introduction of the concept of digital coaching. Therefore, this study is original research.

The following research questions and sub-problems were investigated in the study.

1. How do students and teachers define digital and face-to-face coaching institutions?
2. What are the opinions of teachers and students regarding the advantages and disadvantages of digital and face-to-face coaching institutions?
3. What are the student and teacher views on the suitability of courses for digital and face-to-face coaching institutions?
4. What are the teacher and student perspectives on the future of digital and face-to-face coaching institutions?
5. What are the opinions of students regarding their preferences for digital or face-to-face coaching, and the opinions of teachers regarding their preferences for receiving or giving coaching in digital or face-to-face coaching institutions?
6. Is there a significant difference between the academic achievements of students receiving education in digital coaching institutions and those receiving education in face-to-face coaching institutions?

2. Method

This study was conducted using a qualitative research method within the scope of a holistic single-case design of a special case study.

2.1. Group of Study

The sample group was selected based on the "typical sampling method" principles. In this sampling method, the included sample consists of typical cases that conform to general patterns in the subject under study. The aim is not to generate generalizable knowledge but to describe in detail what is commonly accepted as normal or average (Yıldırım and Şimşek, 2008).

Data related to the digital tutoring center were collected from students and teachers who received and provided education through the digital tutoring platform. Data related to the traditional tutoring center were collected from students and teachers who received and provided education in person.

In Turkey, the university entrance exam system is known as the Higher Education Institutions Examination (Yükseköğretim Kurumları Sınavı or YKS in Turkish). The YKS is a standardized exam that assesses the academic abilities and skills of high school graduates who wish to pursue higher education at universities in Turkey.

The YKS is administered once a year by the Student Selection and Placement Center (Öğrenci Seçme ve Yerleştirme Merkezi or ÖSYM in Turkish) and consists of two main parts: the Basic Proficiency Test (Temel Yeterlilik Testi or TYT in Turkish) and the Field Proficiency Tests (Alan Yeterlilik Testleri or AYT in Turkish).

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The TYT assesses the candidates' basic knowledge in four areas: Turkish language and literature, mathematics, social sciences, and natural sciences. The AYT assesses the candidates' knowledge in their chosen field of study and includes questions related to their specific field, as well as questions related to Turkish language and literature, mathematics, and foreign language.

The study group consisted of 20 high school students and graduates preparing for the Higher Education Institutions Examination (YKS) and 9 teachers from various subjects who provided supplementary education on a digital tutoring platform, as well as 10 12th-grade and high school graduates preparing for YKS and 5 teachers from various subjects who taught at a face-to-face tutoring center. Therefore, this study was conducted with a total of 44 participants, including 30 students and 14 teachers. To compare the academic achievements of the students, the average scores of 20 12th-grade students, 10 from the digital cram center and 10 from the face-to-face cram center, were examined in terms of their results in the TYT trial exam. Therefore, interviews were conducted with a total of 44 people, and the TYT trial exam scores of 20 people were also analyzed. Therefore, the total sample size of the study is 64.

2.2. Teaching Plan and Systematics of Digital and Face-to-Face Private Tutoring

The sample group is affiliated with the face-to-face preparatory course, which the students prefer for academic support and preparation for university entrance exams. This coaching center provides physics, chemistry, biology, Turkish, mathematics, and geometry classes for science track students, and mathematics, geometry, literature, Turkish, history, geography, and philosophy classes for social sciences track students, each class being two hours per week. There is a library for students to study and a staff member is responsible for maintaining a quiet and disciplined environment in the library. Graduated students attend morning classes during weekdays and study at the library until the end of business hours in the afternoon. For the questions that students get stuck on, question-solving hours are organized. During these hours, teachers stay in the classrooms and students can go to the classroom where the teacher of the relevant subject is located to ask their questions. The 12th-grade students do the same activity on weekends. Additionally, they receive remedial classes and tutoring two evenings during the week. The academic staff of the face-to-face coaching center consists of an educational consultant, a director, one assistant director, and 10 teachers. The psychological counselor meets with the students one-on-one on certain days of the week, provides homework tracking, and offers psychological support. In the face-to-face coaching center, mock exams are held on certain days of the week, and national exams are held once a month to enable students to see their level compared to the whole country.

All activities carried out in the face-to-face coaching center are implemented in a more flexible manner in the digital coaching center that forms the sample group. The students and teachers enrolled in this preparatory course come from various cities in Turkey. The classes are scheduled according to the student's school dismissal time on weekdays. The students receive two hours per week of online classes in physics, chemistry, biology, mathematics, geometry, literature, geography, and history. The academic staff of the digital coaching institute consists of one administrator, eight teachers, and one psychological counselor. The manager has registered the teachers and students on a pre-existing online education platform, https://www.dijitalokul.com/, and created a class schedule and educational calendar according to the student's school hours. The teachers, students, and parents have separate WhatsApp groups for online messaging and communication. The class schedules and other announcements are made through these groups. When students log into their own pages on the digital school website, they click on the relevant course on the schedule for the class time and connect to the lesson via "Zoom," an online video conferencing platform that allows screen sharing and is suitable for teaching. The teachers can monitor the students, take attendance, assign homework, communicate with parents, and send mass messages through the digital school website. Additionally, teachers can create tests from the question pool in the Z-books loaded onto the digital school and conduct online exams. In the digital tutoring center, guidance activities are also carried out. The psychological counselor meets with students online on certain days of the week, follows up on their assignments, and provides encouraging talks for university exams at the digital prep school.

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2.3. Data Collection Tools and Analysis

To find the answers to the first 5 research questions, a set of 7 semi-structured interview questions prepared by the researcher was used. The questions were determined with the input of an expert in qualitative research techniques and 2 experts in science education. In this context, the following questions have been asked of teachers and students.

1. What is a digital tutoring center? Share your thoughts.
2. What do you think are the advantages of digital education?
3. What do you think are the disadvantages of digital education?
4. Which one would you prefer, digital tutoring or face-to-face tutoring? Explain your reasons according to yourself.
5. What are your thoughts on the future of face-to-face and digital tutoring?
6. What are the courses that are suitable for digital tutoring? State the reasons.
7. What are the courses that are not suitable for digital tutoring? State the reasons.

While asking questions to the students and teachers who receive education and work in the face-to-face tutoring center, the part related to the digital tutoring center has been replaced with the face-to-face tutoring center.

Participants were interviewed for about 10 minutes each. During the interview, audio recordings were taken, and later transcribed by the researcher into a computer file and transferred to an Excel spreadsheet. The data transferred to the Excel spreadsheet were tabulated in accordance with the principles of descriptive content analysis. The tables included themes, codes, frequency of students and teachers, total number, and percentages. While determining codes and themes, the opinion of an expert with expertise in qualitative research methods was obtained, and a consensus was reached on the codes and themes. Due to the fact that some participants' answers were compatible with multiple codes, tables were created with code totals exceeding the number of participants.

To ensure ethical standards, a participant consent form was distributed to the participants. The participants whose opinions were included in the findings were coded as DÖ1, DÖ2... for the students studying at the digital coaching center, and DT1, DT2... for the teachers. The students studying at the face-to-face coaching center were coded as YÖ1, YÖ2... and the teachers were coded as YT1, YT2.

To answer the sixth research question, "Is there a significant difference in academic achievement between students who receive education in digital coaching classes and those who receive education in face-to-face coaching classes?", the average scores of the Foundation Proficiency Test (TYT) in YKS mock exams of 12th-grade students receiving education in digital coaching classes and 12th-grade students receiving education in face-to-face coaching classes were used. The data was analyzed using SPSS 21 statistical program and an independent samples t-test was used to determine whether there was a significant difference between the means of the two groups.

3. Findings

This section presents the findings related to answering the research questions through the descriptive content analysis of semi-structured interview content conducted with the participants and the relationship between the academic achievements of the students learning in face-to-face and digital cram schools.

3.1. Defining Digital and Face-to-Face Private Tutoring from the Perspectives of Students and Teachers

Findings regarding the definition of the concept of "digital coaching" based on the views of students and teachers studying and teaching in digital coaching are presented in Table 1.

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Table 1. Definition of the concept of digital coaching according to the views of students and teachers.

Theme	Code	Student's f	teacher f	total	%
Technology dimension	Online tutoring	7	2	9	30,00
	Live broadcast lessons	1	0	1	3,33
	Integration of technology in education	0	2	2	6,67
Support Dimension	Alternative to face-to-face education	4	3	7	23,33
	Learning environment outside of school	1	0	1	3,33
	Distance education	2	3	5	16,67
Convenience	A platform bringing together students and teachers from different cities	5	0	5	16,67

Upon examining Table 1, students and teachers define digital cram under three distinct themes. The first theme is related to the technology dimension of online tutoring, which is defined as a platform for delivering tutoring services over the Internet. This theme received the highest percentage of responses, with 30% of students and 6.67% of teachers describing the digital cram center as an online tutoring platform. The second theme is related to the support dimension of the digital cram center, which is defined as an alternative to face-to-face education, a learning environment outside of school, and distance education. The third theme is related to convenience and is defined as a platform that brings together students and teachers from different cities. It received 16.67% of the responses from the students. It can be concluded that while both students and teachers perceive the digital cram center as an online tutoring platform, they also consider it as an alternative to traditional face-to-face education and a means of facilitating learning beyond the classroom.

The opinions of some participants who defined the digital cram center are as follows:

DÖ19: "*A digital cram school is another environment created for implementing the education practices that we carry out in school. It is a different type of education. In my opinion, the aspect that distinguishes it from school, in my opinion, is our attitude, which varies depending on the time we allocate or our goals. The cram school environment can also be used and evaluated like schools. We can benefit from all educational opportunities in the digital cram school environment, just like in school. We can obtain the same benefits as we do in school.*"

DT6: *"It is the delivery of lessons online using a computer, tablet, or phone in environments where face-to-face education is not suitable."*

In general, students and teachers have defined digital cram schools as a "technology-integrated education platform that brings together students and teachers from different cities and is considered as an alternative to face-to-face education."

According to the views of students and teachers who attend face-to-face cram school, the summary of the definitions of face-to-face cram school is presented in Table 2.

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Table 2. Definition of face-to-face cram school according to student and teacher views.

Theme	Code	Student f	Teacher f		%
School reinforcement	Reinforcement for school courses	7	3	10	52,63
	Out-of-school learning environment	2	0	2	10,53
	A training institution born out of the inadequacy of the Ministry of National Education (MEB).	0	1	1	5,26
socialization	An environment where people with the same goal come together and can discuss their lessons.	3	0	3	15,79
	A physical environment where the library encourages students to study together.	1	0	1	5,26
preparation for exams	A coaching institution that prepares students for university entrance exams.	1	2	3	10,53

The participants have defined face-to-face coaching institutions under the themes of "school reinforcement", "sociability", and "preparation for exams", describing them as "support for school lessons", "out-of-school learning environment", "an institution born from the inadequacy of the Ministry of Education", "a social environment where people with the same purpose come together and discuss their lessons", while some emphasized the importance of their libraries and referred to them as "an environment where students encourage each other to study". Moreover, 10% of the participants described coaching institutions as "an educational institution that prepares students for university exams".

Some of the opinions of the participants who defined the face-to-face coaching institute are as follows:

"A paid institution where students can develop themselves socially while studying for exams" (YÖ2).

"The tutoring center is like a study center for me. I can discuss questions with my friends, be in the same environment as people who study the same topic as me, ask teachers the questions that I am curious about easily, and it has a library and a comfortable workspace that I can use for myself" (YÖ3).

"It is a place where high school education is presented to students in an accelerated manner" (YT4).

Based on the answer to the first research question, "How do students and teachers define digital and face-to-face cram schools?", *digital cram schools* can be defined as *"an online education platform that integrates technology and brings together students and teachers from different cities, considered as an alternative to face-to-face education."* *Face-to-face cram schools*, on the other hand, can be defined as "*a social learning environment in that students choose to reinforce their school lessons or prepare for YKS in a disciplined manner, which emerged as a result of the inadequacy of the Ministry of National Education, where students can discuss questions with their friends and encourage each other to study."*

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3.2. Advantages and Disadvantages of Online and Face-to-Face Coaching Centers

Summary Table 3, which presents the advantages of digital cram school was created by considering the opinions of teachers and students who receive education in digital cram school.

Table 3. The advantages of digital cram centers are determined based on the opinions of teachers and students in digital cram center education.

Theme	code	Student f	Teacher f	total	%
saving	Time-saving	15	8	23	37,10
	space-saving	7	4	11	17,74
	Cost-saving	1	3	4	6,45
	Energy-saving	6	2	8	12,90
ease of accessibility	ease of access for teachers	1	1	2	3,23
	ease of access for students	1	1	2	3,23
health	Ensuring continuity of education during pandemic conditions	1	1	2	3,23
	The absence of the risk of contracting an infectious disease	2	1	3	4,84
Permanence	Enhancing Retention through Visualizing Lessons with Technological Resources	1	1	2	3,23
	Improved Retention through More Frequent Topic Reviews	2	0	2	3,23
Self-confidence	Providing Opportunities for Students Who Hesitate to Ask Questions in Physical Classroom Environments	3	0	3	4,84

When examining Table 3, it can be observed that both students and teachers expressed their opinions on the advantages of the digital classroom under the themes of "savings," "ease of access," "health," "retention," and "self-confidence". "While 37% of the participants argued that the digital classroom saves time, 17% stated that they saved space by not going to a physical classroom environment like a tutoring center. Most of the students enrolled in digital classrooms emphasized that time-saving was among the advantages of this platform, and they chose this platform for this purpose. Some students emphasized that face-to-face tutoring centers are more expensive, while digital classrooms are more economical. They also highlighted that they saved money on food and drinks. The percentage of participants who stated that they saved energy spent on going to a face-to-face tutoring center is 13%. Approximately 8% of the participants mentioned that, apart from the mentioned advantages, there is no risk of contracting a disease in pandemic conditions and emphasized that it is advantageous in terms of health. Among the advantages, a noteworthy issue is the theme of self-confidence. Some students mentioned that since students do not see their classmates face-to-face in digital classrooms, students who hesitate to ask questions in physical classroom environments become more confident and find opportunities to ask questions.

Here are some of the opinions of the participants who were consulted to identify the advantages of digital classrooms:

"More advantageous than face-to-face education. Some people have phobias related to speaking. Some people tend to avoid face-to-face education due to their tendency to avoid communication. However, in digital education, we don't have to see each other face-to-face. We don't even have to see each other face to face, and if we want, we even have the possibility not to speak. We can communicate in writing. Similarly, in platforms like Zoom. In my opinion, digital education is easier. Writing something on a whiteboard in a physical classroom is a waste of time for us, but when you open a page as a PDF on a computer, it provides an advantage in terms of everyone being able to see it and more opportunities to solve questions." (DÖ19).

"In contrast to traditional coaching, there is minimal time wasted in online coaching and you can ask questions without hesitation because you don't know the people." (DÖ9).

"It saves time. The time spent by students commuting to and from the traditional coaching centers is saved for the students. It is economical. Less fee is paid than the fee paid for traditional coaching centers. The money spent by students while they are outside their homes stays with the students. There is more time left for learning." (DT9)

"The biggest advantage is saving time and space. Because to educate peer individuals, both space arrangement and time to meet with the educator are required. It is called a digital classroom, which provides faster and more lively access to information." (DT1)

Based on the opinions of participants regarding the advantages of digital coaching, it can be stated that digital coaching:

- ✓ Saves time, space, energy, and money.
- ✓ Facilitates communication between students and teachers.
- ✓ Enables education to continue without interruption or risk of contagious diseases, even during pandemic conditions.
- ✓ Allows for more visual and comprehensive lesson delivery, leading to better retention of knowledge.
- ✓ Helps students gain more confidence in asking questions without the fear of being seen by classmates while asking in person.

The findings obtained from the opinions of teachers who teach and students who learn in digital cram centers are presented in Table 4 in response to the question "What are the disadvantages of digital cram centers?"

Table 4. The disadvantages of digital cram centers are identified based on student and teacher views.

Theme	code	Student f	Teacher f	total	%
Technical issues	A disadvantage for people who do not have access to technology	1	1	2	3,45
	Microphone and camera issues	2	1	3	5,17
	Internet disruption	7	2	9	15,52
Communication problems	lack of interaction between students and teachers	1	4	5	8,62
	inability to establish eye contact	4	3	7	12,07

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	inability to perceive facial expressions, gestures, and body language	1	1	2	3,45
	The inability to check homework	1	3	4	6,90
Social issues	Isolation of the student	4	2	6	10,34
Individual issues	Difficulty focusing and concentration problems	7	2	9	15,52
	inefficiency	3	2	5	8,62
	Deviations from rules and protocols	1	0	1	1,72
There is no disadvantage.		3	2	5	8,62

When examined, participants expressed their views on the disadvantages of digital classrooms under the themes of "technical problems", "communication problems", "social problems" and "individual problems" in Table 4. 15% of the participants stated that Internet disruption was the primary technical issue, 3% pointed out that not everyone has equal access to technological resources, which may lead to inequality in education, and 5% mentioned that some participants were unable to ask questions due to microphone and camera problems. All participants reported experiencing camera focus problems. According to the findings, one of the main communication problems is the inability of teachers and students to establish eye contact, which leads to a less efficient learning experience. Some participants have also pointed out that digital classrooms may lead to social isolation and introversion of students due to the inability to gather with their classmates like in traditional face-to-face classrooms. Many participants individually expressed that they could not concentrate on the class and could not get any productivity.

Some participants' opinions on the disadvantages of digital cram centers are as follows:

"I have always struggled more in verbal lessons. When I memorize something, it is more difficult for me to remember it on black and white paper, but if I use colored paper, it stays in my mind. Similarly, when the teacher uses body language to explain something, it all stays in my mind together. It is difficult to do this online." (DÖ11).

"I personally can't feel much intimacy towards people I met over the phone. If it were possible, I would prefer to attend a face-to-face tutoring center for my studies." We are closing ourselves off and I don't think it's as productive as it could be because we're communicating through our phones. It's not the same as being face-to-face where the teacher can look into our eyes and ask us for an answer, compared to live online classes where we're asked to unmute and raise our hand."(DÖ13)

"The student cannot ask as many questions. The teacher cannot see the student or their facial expressions. The study sessions are not as efficient. The teacher cannot check homework or textbooks. The teacher cannot have a strong impact on the student."(DT3).

"It is difficult to test how much and what the student has understood. The feedback from students is not reliable in group lectures. It is not possible to notice where the student's attention is diverted. We do not know the

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environment of the student; whether they are feeling sleepy or listening to the lecture at their desk, which causes a loss of focus and can hinder learning." (DT8)

Based on the opinions of the participants, the following items can be listed among the disadvantages of digital tutoring centers:

- ✓ Students who do not have a computer, tablet, or smartphone cannot benefit from digital schools. Even if they have a computer, if there is no microphone or camera support, it is not evaluated in the same category as live lessons, but rather as an instructional video.
- ✓ When the Internet is suddenly cut off, and there is no mobile Internet, classes are interrupted.
- ✓ The teacher cannot make eye contact with the students, and the student cannot see the teacher's body language, which may cause the student to be less productive, easily bored, and have difficulties focusing.
- ✓ The teacher cannot check homework effectively.
- ✓ Students may not be able to communicate well with friends they meet online, and as a result, they may become socially isolated.
- ✓ Because the administrators' activities are not felt as effective as in face-to-face tutoring, students may show reluctance to comply with rules and regulations.

The advantages of face-to-face coaching are summarized in Table 5 based on the views of students and teachers who are studying and teaching in face-to-face coaching.

Table 5. Findings regarding the advantages of face-to-face tutoring.

Theme	code	student f	teacher f	total	%
physical conditions	Efficient study environment	2	2	4	12,12
	having a library available	1	0	1	3,03
	Small class size	1	0	1	3,03
personal attention	One-on-one interaction with teachers	2	2	4	12,12
	Asking questions about the topics they are struggling with.	4	1	5	15,15
	Opportunity to fill in gaps	3	1	4	12,12
equality of opportunity in education	laying the foundation of knowledge	1	1	2	6,06
	No age limit	2	0	2	6,06
	Bridges the gap between those with good and poor financial means	0	1	1	3,03
Discipline	It helps to make plans and programs	4	1	5	15,15
	Systematic homework follow-up	3	1	4	12,12

When examining Table 5, the participants expressed their opinions on the advantages of face-to-face coaching under the themes of "physical conditions", "individual attention", "equal opportunities in education" and "discipline". Most of the participants have expressed their views that one-to-one planning and program-making with the student in face-to-face coaching is in favor of the student, and the opportunity to ask questions to teachers that students get in face-to-face coaching increases their success in trial exams. According to the participants, emphasizing the aspect of one-

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on-one interaction between teachers and students in face-to-face coaching has enabled students to effectively address their deficiencies. The absence of an age limit in face-to-face coaching is a significant advantage for students who have graduated from high school but have not enrolled in college and taken a break from their education. For instance, participant YÖ6 stated that she is 33 years old, married, and a mother of 2 children. She had to pause her education for a while and through the cram center, she was able to learn her courses from scratch and prepare for university exams.

"As a 33-year-old married and mother of two children, I can say that the biggest advantage of cram center for me is the lack of age limit to benefit from the institution and the effective communication with teachers in terms of teaching the lessons from scratch." (YÖ6)

Some of the participants' opinions regarding the advantages of face-to-face tutoring are as follows:

"Being able to get answers to our questions faster and having more preparation and plans for studying in the cram center is a great advantage." (YÖ10).

"Compared to school, the smaller class size is a great advantage in cram center. This way, you can listen more carefully, and ask the questions that come to your mind, and the library is quieter and more productive than the libraries outside. Because everyone's goal is to study, it is more advantageous than the libraries outside."(YÖ3).

"The student who comes to the coaching center first completes their deficiencies in test solving. As the topics are quickly explained, they remember the parts they have forgotten, and with the exams conducted throughout Turkey, they can see their place nationally. Or they can see how much effort they need to make to reach their goal." (YT1).

The advantages of face-to-face coaching can be listed as follows based on the participants' views:

- ✓ Providing students with a working environment with their libraries in terms of physical conditions, having fewer classes compared to school classrooms, and therefore, students can adapt to the lessons better.
- ✓ Allowing students to interact with their teachers and to ask questions to the relevant teachers during the question-solving hours to fill their gaps in the subject.
- ✓ Having no age limit, people who have paused their education can benefit from basic education.
- ✓ Being more affordable than private schools, bridging the gap between those who have good financial situations and those who do not.

Table 6 summarizes the responses of participants who receive education in face-to-face coaching institutions regarding the disadvantages of such institutions in response to the question "What are the disadvantages of coaching institutions?"

Table 6. Findings on the opinions of participants regarding the disadvantages of face-to-face private tutoring.

Theme	code	Student f	teacher f	total	%
unsociability	The inability to socialize and spend time with friends due to a hectic schedule.	3	0	3	15,79
	The inability to socialize due to a focus solely on exams.	2	1	3	15,79

Disinterest in school	The student's reliance on private coaching causes neglect of their regular school studies.	1	1	2	10,53
not being cost-effective	Expensive in terms of food and transportation costs.	4	0	4	21,05
	Inefficient use of time and lack of productivity due to a lack of time management	3	0	3	15,79
There is no disadvantage.		1	3	4	21,05

According to Table 6, the participants have expressed their views on the advantages of face-to-face private coaching under the themes of "unsociability", "lack of interest in school" and "lack of cost-effectiveness". Many of the participants think that private coaching is expensive in terms of transportation and food costs. The percentage of those who express the idea that students cannot meet and spend time with their friends due to their busy schedule is the same as the percentage of those who state that there is a lack of time management and productivity during the day, which is 15.7%. There are also those who claim that students rely on private coaching and neglect their regular school studies, leading to absenteeism from school. The percentage of participants who declare that there are no disadvantages is 21%. Some of the opinions expressed by the participants are as follows:

"We have to deal with disadvantages such as transportation and food costs because we are obliged to attend private coaching institutions." (YÖ9)

"I do not think there is any disadvantage. It is simply a need, and you do not face any disadvantages while fulfilling that need." (YÖ10)

"Students who attend private coaching institutions do not pay attention to theoretical lessons in school because they think they will learn them at private coaching anyway. They should consider private coaching as a place for practical application." (YT5)

Based on the opinions of the participants, the disadvantages of face-to-face private coaching can be listed as follows:

- ✓ Students under the pressure of exams may get into a busy schedule and may not have time for themselves and their friends and may become socially isolated.
- ✓ They may find the lessons taught in private coaching sufficient and may neglect their regular school studies.
- ✓ They may face economic difficulties due to transportation and food costs.
- ✓ Students who live far away from the private coaching institution and must change to multiple means of transportation may not be able to make efficient use of their time.

3.3. Digital and Face-to-Face Appropriate and Inappropriate Courses for Coaching Centers

The answer to the third research question, "What are the views of students and teachers regarding the classes that are suitable and unsuitable for digital and face-to-face coaching?" was sought by asking the digital sample group about the classes suitable and unsuitable for digital coaching, and by asking the face-to-face sample group about the classes suitable and unsuitable for face-to-face coaching. The results are presented in tabular form.

Classes suitable for digital and face-to-face coaching, identified based on the opinions of the sample groups in digital and face-to-face coaching, are presented in Table 7.

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Table 7. Findings regarding the courses suitable for digital and face-to-face tutoring.

Theme	code	student f	Teacher f	Total	%
courses that are suitable for digital coaching	verbal courses	5	2	7	24,14
	Numerical courses	5	3	8	27,59
	All of them are suitable	10	4	14	48,28
Suitable courses for face-to-face coaching	verbal courses	1	0	1	6,67
	Numerical courses	6	1	7	46,67
	All of them are suitable	3	4	7	46,67

According to Table 7, the percentage of participants who stated that numerical courses are suitable for digital coaching is 27%, while the percentage of those who expressed that verbal courses are suitable is 24%. The percentage of those who say that there are no unsuitable courses is 48%. The percentage of participants who stated that numerical courses are suitable for face-to-face coaching and the percentage of those who said "all courses are suitable" are the same, which is 46%.

Only one participant stated that verbal courses are suitable for face-to-face coaching, and this person argues that verbal courses can be learned by discussing with peers, while numerical courses are based on logic and can be learned by individuals on their own (YÖ5).

Digital coaching participants:

"All courses are suitable; the important thing is to use appropriate arguments. For example, for mathematics, a graphic tablet and suitable software should be used. After using tools and materials that attract the student's attention and make the course appealing, all courses can be taught" (DT9).

"I think basic courses like Turkish and mathematics are more suitable because seeing extra courses is important for review. And I think these courses require more practice and repetition" (DO14).

Face-to-face coaching participants:

"Subjects such as physics, chemistry, mathematics, and geometry require more understanding and interpretation rather than memorization. Because teachers can explain to them when we ask questions in class" (YO9).

"Positive sciences, physics, chemistry, biology, mathematics, and geometry are more needed in this regard. But I think a reading and criticism course should be brought to both the Ministry of Education and the coaching sector. A certain book should be read every month, and its critique should be made by a knowledgeable person, such as a sociologist or psychologist" (YT5).

The view that numerical courses are more suitable for both types of coaching institutions compared to verbal courses generally prevails in both participant groups, and the participants have stated that all courses are suitable for coaching institutions.

Based on the opinions of the sample groups in digital and face-to-face coaching, the courses that are not suitable for digital and face-to-face coaching have been identified and presented in Table 8.

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Table 8. Findings on courses not suitable for digital and face-to-face coaching.

Theme	code	Student f	teacher f	Total	%
Courses that are not suitable for digital tutoring	courses that require physical activity	8	3	11	37,93
	Verbal courses	6	4	10	34,48
	Numerical courses	2	2	4	13,79
	There are no inappropriate courses	4	0	4	13,79
Courses not suitable for face-to-face tutoring	courses that require physical activity	1	2	3	20,00
	Verbal courses	5	0	5	33,33
	Numerical courses	1	0	1	6,67
	Subjects that will not be asked in YKS.	0	1	1	6,67
	There are no inappropriate courses	3	2	5	33,33

According to Table 8, the courses that are not suitable for digital tutoring are those that involve physical activity (such as art and physical education). As per the opinions of the participants, 34% of them claimed that verbal courses are not suitable, while 13% claimed that numerical courses are not suitable. The percentage of participants who declared that all courses are suitable is also 13%.

When looking at the classes suitable for face-to-face tutoring, 20% of the participants stated that classes requiring physical activity were not suitable for tutoring. The percentage of those who stated that verbal classes were not suitable is 33%. The reason for those who said that verbal classes were not suitable is that individuals can understand these classes on their own, and there is no need for an extra expert to learn these classes. There is only one participant who stated that numerical classes were not suitable for tutoring. The reason for this person is that numerical classes are logic-based, and there is no need to learn them in a group or in a classroom setting (YÖ5).

A teacher who provides education in a face-to-face coaching institution has argued that teaching subjects that will not be asked in the exam is unnecessary. The percentage of those who say there is no inappropriate subject is 33%.

According to some participants, who shared their opinions on identifying courses that are not suitable for both face-to-face and digital cram schools, the following are their views:

Digital cram school participants:

"Physical education because sports and exercises require a coach to show you how to do it, and it cannot be done correctly just by watching or demonstrating, so the lessons would be meaningless" (DÖ8).

"Not effective in verbal lessons. You must talk constantly. After a certain point, the student gets bored, of course. Questions are not practical, such as math and physics questions. Moreover, in terms of attendance, students participate more in numerical courses" (DT4).

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Face-to-face cram school participants:

"I think it is for verbal courses because I can understand it when I read it myself, so I think it is not appropriate" (YÖ7).

"Courses that will not be asked in the exam are not suitable because the cram school prepares students for the exam" (YT2).

In general, it can be said that verbal lessons are not suitable for face-to-face tutoring. The reason for this is that individuals can learn verbal lessons on their own. For digital tutoring, unsuitable lessons are verbal lessons and lessons that involve physical activity.

3.4. The Future Status of Online and Face-to-Face Private Tutoring

Predictions have been made regarding the future status of both types of coaching based on the opinions of the participants, and the findings are presented in Table 9.

Table 9. Predictions regarding the future status of cram center education.

code	student f		teacher f		Total-	
	Face to face	digital	Face to face	Digital	%	
Both will continue.	1	5	0	2	8	18,60
Face-to-face education will be in the background, digital coaching will become widespread.	5	12	1	3	21	46,51
Face-to-face education will continue, while digital education will be an alternative to face-to-face education.	4	3	4	4	15	34,88

According to Table 9, there are three predictions about the future of private tutoring: "Digital and face-to-face tutoring will continue in the future", "face-to-face tutoring will take a back seat and digital tutoring will become widespread", and "face-to-face tutoring will continue, while digital tutoring will become an alternative to face-to-face tutoring". 46% of the participants argue that education will be digitized in the future and face-to-face tutoring will take a back seat.

Some of the participants have the following views on the future situation of private tutoring:

"I think that in the future, private tutoring will work in a mixed way, both online and face-to-face, and digital tutoring will increase" (DO4).

"Face-to-face education is an education that will never end. Digital tutoring will grow alongside face-to-face education, but it will never replace it" (DT9).

"I think that private tutoring will not exist in the future. Because currently, online tutoring has peaked, and in the future, everything may turn into software, so private tutoring may disappear" (YO10).

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"As long as there are exams, there will be a need for private tutoring, so private tutoring will exist as long as there are exams" (YT1).

Based on the views of the participants, it can be said that digitalization will increase in the future, and therefore, there will be an increasing demand for digital private tutoring.

3.5. Participants' Preferences for Digital or Face-to-Face Private Tutoring

In order to find the answer to the fifth research question, which is "What are the views of students on the preference of digital or face-to-face private tutoring for themselves and their teachers?", a question was asked to the digital private tutoring sample group "Which one would you prefer, digital or face-to-face private tutoring?" and the descriptive content analysis of the responses given by the participants is presented in Table 10.

Table 10. Views of students and employed teachers who receive education in digital private tutoring on their preferences for private tutoring.

preference	reason		student f	teacher f	total	%
digital	conditional	if the class size is small	1	2	3	10,00
		if the teachers are qualified	1	0	1	3,33
		if the home is far from the private tutoring center	2	0	2	6,67
	unconditional	savings in time, energy, economy, etc.	6	1	7	23,33
		health (pandemic conditions)	1	0	1	3,33
		absence of peer bullying	0	1	1	3,33
		Face-to-face private tutoring can be tiring.	2	0	2	6,67
Face to face	More Social		4	1	5	16,67
	Can focus better		2	3	5	16,67
	Reason not specified		2	0	2	6,67
both			0	1	1	3,33

According to the given table, 23% of the participants stated that they preferred digital classrooms because it saved them time, energy, and money. Based on the opinions of other participants, most teachers and students who have experienced digital classrooms stated that they would prefer traditional classrooms for various reasons. For instance, some students who live far from their schools prefer digital classrooms, while others attribute their preference for traditional classrooms to the quality of the teachers. Some students also mentioned that they have trouble focusing in crowded classrooms, and therefore, they would choose online classes if the class size were limited to 10

students. Additionally, some teachers mentioned that they prefer digital classrooms because they offer a safe space for students who may face peer bullying.

The reasons the participants who stated that they would prefer face-to-face coaching after experiencing digital coaching are difficulty in focusing and inability to socialize with their classmates in digital classes.

Some of the participants expressed their views as follows:

"I would definitely prefer a digital classroom, but it also depends on the quality of the teachers. Last year, the teachers were terrible, and I couldn't get any benefits. The effort of the teachers is also very important. If the teachers are good, I would choose the digital cram center because they keep you engaged in the class. They constantly monitor you." (DÖ3).

"It depends on where you are located because traveling to face-to-face tutoring centers can take up to 1.5 hours in total, which is a huge waste of time, but other than that, face-to-face tutoring is much more efficient. Seeing the other person in person and being in a classroom environment naturally increases concentration." (DÖ11).

"*I would prefer face-to-face education. There is no intimacy in digital classrooms, you are trying to reach the student through a glass screen, and the student is trying to reach you. Your tone of voice and facial expressions are not perceived clearly. It feels very virtual to me. I prefer to look into the student's eyes. Therefore, digital tutoring can only be an alternative for me." (DT4).*

"I prefer to teach or learn at my own home or office because there would be less time wasted for both the teacher and the student. With the time saved, I can either teach more classes or take more classes, or I can have more time for myself." (DT8)

In summary, the findings of this study indicate that students and teachers who have experienced digital tutoring predominantly prefer digital tutoring.

The findings regarding the responses of teachers and students receiving education in face-to-face coaching to the question "Which one would you prefer, digital or face-to-face coaching?" are presented in Table 11.

Table 11. Views of teachers and students working/studying in face-to-face coaching centers regarding their coaching preferences.

preference	reason	student f	teacher f	total	%
Face to face	More efficient	7	0	7	46,67%
	More serious	2	2	4	26,67%
	there is a connection between the student and the teacher.	0	2	2	13,33%
digital	More efficient if the class size is small	0	1	1	6,67%
Private lessons	Individual attention	1	0	1	6,67%

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According to the responses given by the face-to-face tutoring sample group, 46% of the participants found face-to-face tutoring more efficient, 26% found it more serious and disciplined, and 13% stated that they would prefer face-to-face tutoring because of the stronger teacher-student interaction. One teacher stated that digital tutoring could be preferred if the class size is small. One student also said that they wouldn't prefer either option or that everyone who has the financial means should take private lessons.,

Some of the participants expressed their views as follows:

"I prefer face-to-face tutoring because online tutoring is on the computer, and you cannot get the same level of productivity. Therefore, you cannot focus and pay attention to the lesson while staring at the screen, and you cannot ask any questions that you want. There are pauses in the lesson" (YO3).

"If I had the opportunity and could provide self-discipline, I wouldn't choose one over the other. One-on-one education is much more efficient. Still, I would prefer face-to-face tutoring" (YO5).

"I don't think online education is that negative. If one-on-one teaching is provided, online education can provide education of similar quality to that of a physical classroom. However, if the class is crowded, students may become disconnected over time. Students need to be engaged and alert, and this can only happen in a classroom setting that provides readiness. Therefore, we get more efficient results from face-to-face education." (YT1)

In summary, the findings of the study show that participants who have experienced digital tutoring prefer it over face-to-face tutoring, and the preference for face-to-face tutoring is higher among the face-to-face tutoring sample compared to digital tutoring.

3.6. Academic Achievements of Students Enrolled in Digital and Face-to-Face Tutoring

The sixth research question of the study is "Is there a significant difference in academic achievement between students who receive education in a digital cram center and those who receive education in a face-to-face cram center?" In order to find the answer to this question, the TYT scores of 10 students in the 12th grade who received education in a digital cram center and the TYT scores of 10 students in the 12th grade who received education in a face-to-face cram center for the months of October, November, and December 2021 were compared. Both groups take a weekly mock exam. Therefore, 12 mock exam scores from each group were compared using an independent samples t-test. The results of the comparison are given in Table 12.

Table 12. Comparison of TYT means students receiving education in digital cram center and those receiving education in face-to-face cram center.

	N	$\bar{x}$	ss	p
digital	10	291,61	46,69	0,084
Face to face	10	274,56	24,26	

According to Table 12, the average TYT score of students in the digital cram center is 291.61, while the average TYT score of students in the face-to-face cram center is 274.56. To observe whether there is a significant difference between the TYT averages of the two groups, independent samples t-test was conducted, and the p-value was determined as 0.084. Since this value is higher than 0.05, it is concluded that there is no significant difference between the academic achievements of students in the face-to-face and digital cram centers and that the academic achievements of both groups are similar, according to the findings of the study.

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4. Results and Discussion

In this section, the definitions, advantages, and disadvantages of digital and face-to-face coaching from the perspectives of students and teachers, subjects suitable and unsuitable for these platforms, their prospects, frequency of preference, and their impact on student's academic achievements have been interpreted based on the study findings.

Students and teachers have defined digital cram as "an online education platform that integrates technology into education, brings together students and teachers from different cities, and is considered an alternative to face-to-face education". The theoretical framework of a digital cram center has been previously discussed and defined with concepts such as "online education", "distance education", and "online learning". In previous studies, online education has been defined as follows:

"A physical boundary-free education experience allows students to attend classes and interact with their peers from anywhere" (Sedivy-Benton et al., 2018).

"Online education is the teaching of a class entirely or partially through the Internet and online course management tools" (Guler, 2017).

"An education type where education is delivered online and remotely, eliminating distances in education" (Hrastinski, 2008).

"Post-secondary education in various disciplines takes place in digital environments, whether asynchronous or synchronous, fully online or hybrid" (Hewett and Warnock, 2017).

The definitions provided are like the definition obtained based on the views of students and teachers who provide education in digital classrooms in the study. Definitions related to online education have generally been made by focusing on the dimensions of technology, eliminating distances, facilitating people to reach each other, and saving time.

Face-to-face coaching centers have emerged in our lives as out-of-school learning environments that prepare students for exams (Şirin, 2000). There is a perception that the emergence of cram center institutions is due to the inadequacy of the Ministry of Education (MEB) in meeting the needs of society (Baran and Altun, 2014). Students prefer to attend private tutoring centers to support their school lessons or to prepare for exams (Ayvacı and Nas, 2009). According to studies, there are also definitions of a cram center as a social environment where students can discuss questions with their friends and help each other prepare for exams (Güleç, 2018). Based on the study findings, private tutoring centers, have been defined as "a social learning environment where students can discuss questions with their peers, help each other prepare for school exams or the national university entrance exam (YKS) with a disciplined study program, and motivate each other to study," which emerged as a result of the inadequacy of the MEB and are preferred by students for supplemental education or YKS preparation purposes. This definition provides an alternative to the existing definitions.

Based on participant opinions regarding the advantages of digital cram centers, it can be inferred that these platforms save time, space, energy, and money, facilitate communication between students and teachers, enable uninterrupted education during pandemic conditions without risking infection, offer more visual and interactive lessons resulting in more effective learning, and provide a safer space for students to ask questions with increased confidence due to the absence of physical peer pressure. Similar advantages have been highlighted in studies on online education, which has become widespread during the pandemic. For instance, Serçemeli (2020) conducted a study on students' perceptions of remote education and found that the biggest advantage in the eyes of students was time-saving. The advantage of saving space in distance education is supported fact by

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other studies (Yüksel, 2021). Previous studies, it has been indicated that digital tutoring has a positive effect on student-teacher interaction (Akdemir, 2011).

Based on the results regarding the disadvantages of digital cram center, it can be said that students who do not have a computer, tablet, or smartphone cannot benefit from digital education, and even if they have a computer, it cannot be evaluated in the same category as live classes without microphone or camera support, it can only be considered as a video tutorial. When the Internet is suddenly cut off, or if there is no access to mobile Internet, classes can be interrupted. Teachers cannot make eye contact with students, and students cannot see the teacher's body language, which can result in students not getting enough out of the lesson, getting bored quickly, and experiencing problems with focusing. Teachers cannot check homework effectively. Students may not be able to communicate well with friends they meet online and naturally become antisocial. Since administrators do not feel the same level of efficiency as in face-to-face cram centers, students may show reluctance in complying with rules related to the subject matter. Evaluation studies on distance education have shown that there are more disadvantages than advantages of distance education (Baydar Arıcan, 2021; Özgöl et al., 2017; Şeren et al., 2020).

According to the findings regarding the advantages of face-to-face coaching centers, they provide students with a working environment like libraries in terms of physical conditions. One of the results obtained based on the participants' opinions is that the classroom environment is much less compared to school classrooms, therefore, students adapt better to the lessons. In his study on mathematics teachers and coaching centers, Baştürk (2011) also found that coaching centers are preferred by high school students to enter a competitive atmosphere. The results obtained from Çolak's (2006) master's thesis are consistent with the advantages of coaching centers, such as students' interaction with teachers, the ability to ask relevant teachers questions during problem-solving sessions and cover their deficiencies, and the absence of age limitations allowing those who have interrupted their education to benefit from basic education. In addition, the fact that coaching centers are more economical than private schools is another advantage that bridges the gap between those who have good financial status and those who do not.

When the disadvantages of face-to-face coaching institutions are examined, it can be said that students are unable to allocate time to themselves and their friends due to exam anxiety and intensive pace and cannot socialize. There are private education courses that carry out similar activities with face-to-face coaching institutions, as well as education support and development courses. In a similar study where the sample group consisted of students and teachers studying in the state-affiliated education support and development course, the disadvantages of the course, such as "transportation problem" and "short break times", were highlighted (Nartgün and Dilekçi, 2016). Other disadvantages of coaching institutions may include the possibility of students finding the lessons taught in the coaching institution sufficient and neglecting their school lessons, the possibility of economic difficulties due to transportation and meal expenses, and the fact that time cannot be efficiently utilized for students who must change multiple vehicles and have a long distance between their home and the coaching institution.

According to the results of a study, digital and face-to-face lessons are suitable for numerical courses, while unsuitable for verbal courses. Based on participant opinions, it can be said that students struggle while learning numerical courses and need digital or face-to-face help. It is observed that verbal courses are about comprehension and therefore students can learn them on their own without the need for extra classes. In a study conducted in 2010 when the Internet was new to our lives and online education was not widespread, it was argued that verbal courses are suitable for the Internet environment (Kesler, 2010). However, in this study, both verbal and numerical courses were given on the digital platform, and it was practically determined that verbal courses are not suitable for relevant individuals.

There are three views regarding the future of digital coaching centers: the continuation of both digital and face-to-face coaching centers, the predominance of digital coaching with face-to-face coaching fading into the background, and the continuation of face-to-face coaching with digital coaching as only an alternative. Both groups of participants largely believe that digital coaching

centers will become more widespread in the future. Studies predicting an increase in digitization (Ardıç and Altun, 2017; Engin, 2021) also emphasize this point.

Another result obtained from the study is related to the participants' preferences for cram centers (private exam preparation courses). According to the study, participants who experienced digital cram centers prefer digital cram centers, while participants who attend face-to-face cram centers prefer face-to-face cram centers. Some of the students who received education in digital cram center stated that they were initially biased against it but their biases were broken after they experienced it. This finding supports another study on distance education (Tüzün and Toraman, 2021) which suggests that as students' experience of remote learning increases, they find online education more beneficial. Another study conducted in 2012 (Etlican, 2012) found that digital education is preferred by the younger generation.

According to the study, when the academic achievements of students studying in digital and face-to-face prep schools are compared based on their scores in the Turkish Higher Education Entrance Exam (TYT), there is no significant difference between the academic achievements of both groups. However, it is believed that the small sample size of the examined group may have affected this result, and a larger number of students should be considered to reach more precise conclusions. Indeed, in another study conducted with a total of 80 students, 40 in the experimental group and 40 in the control group, who received education consciously in an online environment, their academic achievements were found to be high (Keskin, 2016). In another study where the experimental group consisted of 51 and the control group consisted of 31 students, students receiving face-to-face education had higher academic achievements compared to those receiving distance education (Uluğ and Tuncer, 2017).

In conclusion, when face-to-face and digital education are compared, students and teachers who have experienced face-to-face education found it more beneficial in certain aspects, while teachers and students who have experienced digital education found it more beneficial in certain areas. Observations show that generally, students and teachers have biases against digital education, but their opinions change after experiencing it. It is clear that, like in healthcare, agriculture, banking, and finance, digitalization will also be implemented in education in the future. Therefore, necessary infrastructures should be established now, and modern times should not be left behind. More platforms should be created as alternatives to platforms like Digital School, and teachers should be given necessary technical training in these areas. It should not be forgotten that the current generation growing up is intertwined with technology and they have more expertise in this field than the current teachers.

Digital education can contribute to the theoretical understanding of education because these platforms can help us rethink the learning process and change teaching methodologies and methods for monitoring student performance. They can also improve communication in the teaching process by changing how teachers and students interact with each other. However, it should be noted that digital classrooms are designed to enhance students' self-learning abilities, and therefore cannot be a complete alternative to traditional classroom instruction.

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