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Abstract

The research methods course plays a crucial role in providing undergraduate students with the knowledge and practices necessary for research processes. Its effectiveness in various educational settings—such as face-to-face, distance, and hybrid education—has been explored from multiple perspectives using diverse data sources. The present study aimed to examine the perspectives of prospective teachers who had taken the research methods in education course through face-to-face, distance, and hybrid educations, as well as the instructors who had taught these courses. The study explored the similarities and differences between these viewpoints based on their experiences. The phenomenological design of a qualitative research, was employed. The interviews were conducted using a semi-structured form developed by the researchers, and the data obtained were analyzed using Maxqda (ver.20). The findings regarding the codes and themes were presented in tables and hierarchical code-subcode models. It was found that the prospective teachers considered this course important in terms of their academic development, especially in terms of using it in the assignments of other courses, preparing projects, learning scientific research, and gaining a scientific perspective. Lack of interaction and communication, especially in the question-answer method, technical problems, inability to focus on the instructor and attendance were mentioned as disadvantages in the distance education practice of the course. On the other hand, being able to listen to the course again that they missed and taking notes better were highlighted as advantages. The educational practice where most students choose to take this course is face-to-face. Based on the study's findings, some recommendations for different educational practices were presented.

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Research Article

How Educational Practices Shape Perceptions of Research Methods Courses: The Case of Faculty of Education *

Menekşe UYSAL SARAÇ [1] Esra OYAR [2]

Abstract

The research methods course plays a crucial role in providing undergraduate students with the knowledge and practices necessary for research processes. Its effectiveness in various educational settings—such as face-to-face, distance, and hybrid education—has been explored from multiple perspectives using diverse data sources. The present study aimed to examine the perspectives of prospective teachers who had taken the research methods in education course through face-to-face, distance, and hybrid educations, as well as the instructors who had taught these courses. The study explored the similarities and differences between these viewpoints based on their experiences. The phenomenological design of a qualitative research, was employed. The interviews were conducted using a semi-structured form developed by the researchers, and the data obtained were analyzed using Maxqda (ver.20). The findings regarding the codes and themes were presented in tables and hierarchical code-subcode models. It was found that the prospective teachers considered this course important in terms of their academic development, especially in terms of using it in the assignments of other courses, preparing projects, learning scientific research, and gaining a scientific perspective. Lack of interaction and communication, especially in the question-answer method, technical problems, inability to focus on the instructor and attendance were mentioned as disadvantages in the distance education practice of the course. On the other hand, being able to listen to the course again that they missed and taking notes better were highlighted as advantages. The educational practice where most students choose to take this course is face-to-face. Based on the study's findings, some recommendations for different educational practices were presented.

Keywords: Face-to-face education, distance education, hybrid education, research methods in education

1. INTRODUCTION

Changes in technological fields and developments in information technologies cause differentiation in social structures and affect the structure of society (Çalık & Sezgin, 2005; Kaya et al., 2023). This effect on the social structure necessitates some changes in the education system (Başaran et al., 2021) and brings some innovations. The distance education system, which is among these innovations, refers to the education that is aimed to be delivered to more people and is more flexible than traditional education; it refers to the education carried out by the trainer and the person receiving the education in different environments (Carliner, 2004). Although the conception of distance education has been around for three centuries, it was carried out by correspondence or audio-visual devices in the early periods, but with technological developments, it has been continued as internet-based since the 1990s (Bozkurt, 2017; Meyer, 2002).

While there are advantages such as accessing a larger number of groups, reducing physical distance in the teaching process and eliminating or minimizing inequality of opportunity in education,

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reducing costs for teaching, there are also limitations, such as the difficulty of preparing educational materials in case of low technological literacy of trainers or students, distraction in students and loneliness and incompatibility due to the lack of interaction between students (Karataş, 2008). Hybrid education, which has similarities with distance education but differs in some points, has emerged to overcome the problems in distance education. It is characterized as a model that combines traditional (face-to-face) learning with online learning (Aktı-Aslan, 2022; Nouby & Alkhazali, 2017). In this type of education, people are offered the opportunity to benefit from online and face-to-face learning environments at the level of a course, program or institution (Gülbahar, et al., 2020). Hybrid education is also called "blended education" or "mixed learning" in the literature (Öner et al., 2014) and has different methods of use. The usage of hybrid education has also led to an increase in research on this teaching method. In this regard, hybrid education has been studied in comparison to other educational practices in certain studies (Berk & Akdeniz, 2023; Yurdakal & Susar-Kırmızı, 2021), while in other studies it has been studied solely (Macdonald & Mcateer, 2003).

When the literature is examined, it is seen that studies on distance education and hybrid education have been conducted both on student opinions and on the opinions of the instructors who teach the course (Cimbar & Yurtseven, 2024; Çelikoğlu et al., 2023; Çenberci et al., 2023; Güler, et al., 2022; Özdoğan & Berkant, 2020; Yağan, 2021). Özdoğan and Berkant (2020) included stakeholder views on distance education implemented in Turkey during the COVID-19 process. These included different educational stakeholders such as school administrators, teachers, faculty members, students, and parents and the problems experienced by all stakeholders in distance education and solution suggestions for these problems were emphasized. In another study, Yağan (2021) evaluated the views on distance education of university students and interpreted the data through four themes: the view on distance education during the COVID-19 pandemic, the advantages and disadvantages of distance education, the roles of instructors in distance education, and the education model preferred by students. Güler et al. (2022) examined student opinions on distance education practices in the COVID-19 process in terms of different variables such as gender, age, and branch. The common point of these studies is that the opinions on distance education were focused during the COVID-19 pandemic. Despite the fact that distance education was less common prior to the pandemic, its use has rapidly increased since then. As a result, research on distance education might have accelerated following the pandemic. Following the pandemic, essential studies were carried out to transition to formal education in the 2021-2022 academic year (YÖK, 2021) and gradually transitioned to face-to-face education. However, with the earthquake disaster centered in Kahramanmaraş in February 2023, the distance education process was started again in universities (YÖK, 2023). For this reason, it is thought that it is important to continue studies on distance education and identify the problems experienced by students in this process and put forward solutions to these problems. In addition, in March 2023, a decision was taken to allow students to attend the courses face-to-face, not only through distance education. In this way, the hybrid education process started, and the courses continued in both face-to-face and distance education. When the studies were analyzed, it was seen that there were relatively few studies on hybrid education and in these studies, participants' perspectives on distance education were typically addressed (Karakus, et al. 2020). In this study, opinions on both face-to-face, distance and hybrid education practices were included, rather than opinions on a single education practice. Considering its advantages and limitations, it is thought that revealing the opinions of students and instructors on face-to-face, distance and hybrid education and the similarities and differences in these opinions is important in terms of steering the decisions to be made on this issue.

Another point drawing attention from studies on different educational practices is that most of these studies are based on obtaining the general opinions of the participants (Berk & Akdeniz, 2023; Guler, et al., 2022; Ozdogan & Berkant, 2020; Yagan, 2021). In addition to general opinions, it is also important to obtain the opinions of students in a specific field and there are studies in the literature

(Gündüz et al., 2023). Because each course has its own dynamics and what happens in the process may differ from course to course. For example, whether the courses are applied or theoretical is one factor that changes this situation. In studies, it is stated that there are more problems in the realization of applied courses with distance education (Yurdakal & Susar-Kırmızı, 2021). The current study focuses on the Research Methods in Education course. This course is part of the Faculty of Education's undergraduate programs and consists of both theoretical and applied components. Within the scope of this course, prospective teachers are expected to learn the basic concepts and principles of scientific research, scientific research processes and skills such as literature review (YOK, 2018). These learning outcomes will affect not only this course but also the studies that students will do in their future courses. Thanks to the skills gained by the students in the course, students apply how to conduct research, how to access resources and how to evaluate them within the scope of their studies in a more planned and systematic way. Therefore, it can be stated that the Research Methods in Education course includes theoretical and practical information. Considering the problems experienced in distance education for applied courses, it is thought that research specific to this course will contribute to the literature. In addition, it is emphasized that it is important to create and develop "researcher teacher" profiles of those who have gained the competencies in this course (Kurt et al., 2011).

This study aimed to find out what prospective teachers and instructors thought about face-to-face, distance and hybrid education in relation to the "Research Methods in Education" course, as well as how these views differed.

Accordingly, the following research questions were attempted to be answered:

1. What are the views of prospective teachers and instructors on the impact of the "Research Methods in Education" course on students' academic development?
2. What are the advantages and disadvantages that prospective teachers experience in the process of taking the "Research Methods in Education" course with face-to-face/distance/hybrid education?
3. What are the difficulties experienced by instructors in the process of teaching "Research Methods in Education" course with face-to-face/distance/hybrid education?
4. What are the views of prospective teachers and instructors about the "Research Methods in Education" course in different educational practices?
    a. in terms of course content,
    b. in terms of teaching methods and techniques used in the course,
    c. in terms of students' participation in the lesson,
    d. in terms of measurement and evaluation techniques used in the course
5. Do prospective teachers prefer to take the " Research Methods in Education" course with a different from of educational practice they have received?

2. METHOD

2.1. Research Design

In this study, it was aimed to determine the views of students and instructors regarding the face-to-face/distance/hybrid teaching of the Research Methods in Education course. In line with the purpose of the study, it was realized by the researchers that the effectiveness of the research methods course varies according to whether it is given face-to-face or distance and it is a phenomenon that is desired to be examined in detail, especially in terms of the problems experienced. Phenomenology, one of the qualitative research designs, focuses on phenomena that are recognized but do not have an in-depth and detailed understanding (Yıldırım & Şimşek, 2011). In this context, the research design used in this study is phenomenology. In phenomenological studies, the common meaning of the experiences of several people about a phenomenon/phenomenon or concept is defined (Creswell,

2013). In phenomenological studies, the phenomenon of interest is first defined, then data are collected from people who have experience with this phenomenon, and a holistic description that forms the essence of the experiences is made (Moustakas, 1994).

2.2. Participants

In the study, individual interviews were conducted with the students of the Faculty of Education who had experience with the phenomenon of interest and the instructors who taught the course. Students who took the research methods course in face-to-face, distance or hybrid ways and instructors who taught the course in these ways were selected. As Creswell (2013) states, in phenomenological studies, a study can be conducted with a group of individuals who have experienced the phenomenon in all its aspects. Therefore, the group size can be 3-4 people or 10-15 people. The study group was selected based on criterion and maximum variation sampling. In criterion sampling, the sample group consists of the people, events, objects, or situations that meet the specified criteria (Büyüköztürk et al., 2018). The goal of maximum diversity sampling is to represent the range of people who might be involved to the problem being studied to the maximum extent. The aim is to determine whether there are common and shared phenomena among diverse situations rather than generalizing (Yıldırım & Şimşek, 2011). There are two different participant groups in the study, and criteria suitable for the purposes of the research were determined for both of them. For the students who will participate, the criteria chosen to ensure diversity simultaneously are: the undergraduate departments in which the students are studying, taking and passing the course face-to-face/distance/hybrid way. It was tried to reach instructors with different areas of expertise who teach this course all educational practices (face-to-face, distance and/or hybrid). In this regard, 7 students who took the course face-to-face, 6 students who took the course via distance education, 3 students who took the course via hybrid education and 4 instructors who taught the course with all educational practices were interviewed individually. Descriptive statistics about the participants were presented in Table 1.

Table 1. Descriptive statistics about the participants

	Variables	Sub-levels	f	%
Regarding prospective teachers	Gender	Female	14	87,5%
		Male	2	12,5%
	Department they studied	Elementary Mathematics Education	8	50%
		Preschool Education	3	18,75%
		Chemistry Education	2	12,5%
		Guidance and Psychological Counseling	3	18,75%
	What grade did they take the course in?	1st grade	8	50%
		2nd grade	8	50%
	Passing grade (letter grade)	AA	1	6,25%
		BA	6	37,5%
		BB	1	6,25%
		CB	1	6,25%
		CC	1	6,25%
		DC	3	18,75%
	Educational practice in which they have taken the course	Face-to-face	7	43,75%
		Distance	6	37,5%
		Hybrid	3	18,75%
Regarding instructors	Gender	Female	3	75%
		Male	1	25%
	How many semesters they give the course	2 semesters	2	50%
		3 semesters and more	2	50%
	Areas of expertise	Measurement and Evaluation in Education	2	50%
		Curriculum and Instruction	1	25%
		Educational Administration	1	25%

While 87.5% (n=14) of the prospective teachers participating in the study were female, 12.5% (n=2) were male students. When the distribution of their departments is examined, it is seen that 50% (n=8) of them studied Elementary Mathematics Teaching, 18,75% (n=3) studied Preschool Teaching, 12,5% (n=2) studied Chemistry Teaching and 18,75% (n=3) studied Guidance and Psychological Counseling.

In addition, 75% (n=3) of the instructors participating in the study were female, while 25% (n=1) were male. 50% (n=2) of the participants stated that they taught this course for two semesters and 50% (n=2) stated that they taught this course for three semesters or more. When the participants were examined according to their areas of expertise, it was seen that 50% (n=2) were experts in the field of Measurement and Evaluation in Education, 25% (n=1) in the field of Curriculum and Instruction, and 25% (n=1) in the field of Educational Administration.

2.3. Data Collection Tools and Process

The main data collection tool in phenomenological studies is an interview (Creswell, 2013; Yildirim & Simsek, 2011). In this study, semi-structured interview forms developed separately for students and instructors were used as data collection tools. The interview forms were developed by the researchers, and then the opinions of experts from the fields of curriculum development and evaluation, educational technologies, measurement and evaluation were obtained. The interview form was organized according to the feedback on the appropriateness of the questions. In addition, while creating the interview questions, pilot interviews were conducted with a student and an instructor and the form was finalized.

Each interview was conducted individually. Before starting the interview, the participants were informed about the confidentiality and purpose of the study. It was stated that participation in the interview was voluntary and that they could terminate the interview at any time. The interviews lasted approximately 15-20 minutes. Interviews were audio-recorded with the permission of the participants and analyzed through audio files.

2.4. Data Analysis

Data analysis aims to reach a conclusion that integrates “what” is experienced “how” and discusses the essence of individuals' experiences, in line with the nature of phenomenological research (Creswell, 2013). Therefore, the main purpose is to reach the concepts and relationships that can be explained with the collected data, and accordingly, content analysis is performed with the data obtained with the interviews (Yildirim & Simsek, 2011). The basic process in content analysis is to combine similar data within the framework of certain concepts and themes and to organize and interpret them in a way the reader can understand.

In the process of content analysis, the data are first coded, and labels are assigned to the descriptive and interpretative information collected in the study (Yildirim & Simsek, 2011). The concepts obtained after coding are classified under a certain theme and the relationships between the concepts are revealed. Afterwards, it is planned to explain these relationships with high-level themes.

Coding for qualitative data analysis can be done manually or using computers. MAXQDA is a computerized qualitative data analysis software used to systematically evaluate and interpret qualitative texts (Creswell, 2013). In this study, the audio recordings obtained from the interviews were coded in the MAXQDA program and categories and themes were determined. The findings regarding codes and themes were presented in tables and maps such as the hierarchical code-subcode model.

2.5. Validity and Reliability

Creswell and Miller (2000) mention eight strategies frequently used in qualitative research to ensure validity. In this study, interviews were conducted with both students and instructors within the scope of the first strategy, triangulation in the data source. Another strategy is peer review with an external researcher controlling the process. With rich and dense descriptions, readers can make

decisions about transferability. In this context, the participants' views were directly presented under the codes and themes obtained.

The concept of reliability in qualitative research can be addressed in many ways (Silverman 2005 as cited in Creswell, 2013). Some of these are recording detailed field notes on a high quality audio device and determining the consensus between coders. In this study, the focus on reliability was on inter-coder consensus based on the use of multiple coders to analyze the data. In the study, the coding within the scope of content analysis was done separately by the researchers. Then, the percentage of agreement between these coders was calculated according to Miles and Huberman's (1994) percentage of agreement. The percentage of agreement between coders was found to be 89.20%. The codes that caused incompatibility were evaluated together by the researchers and a consensus was reached in the units where there was a conflict. In this direction, it can be said that evidence of inter-coder consistency was provided within the scope of the research.

3. FINDINGS

In the context of the first question of the study, prospective teachers and instructors were asked about their views on the impact of the "Research Methods in Education" course on students' academic development. The code-subcode models obtained from both groups regarding the academic and personal development of the students were given below, respectively. Firstly, Figure 1 presents a visual representation of the responses of the prospective teachers.

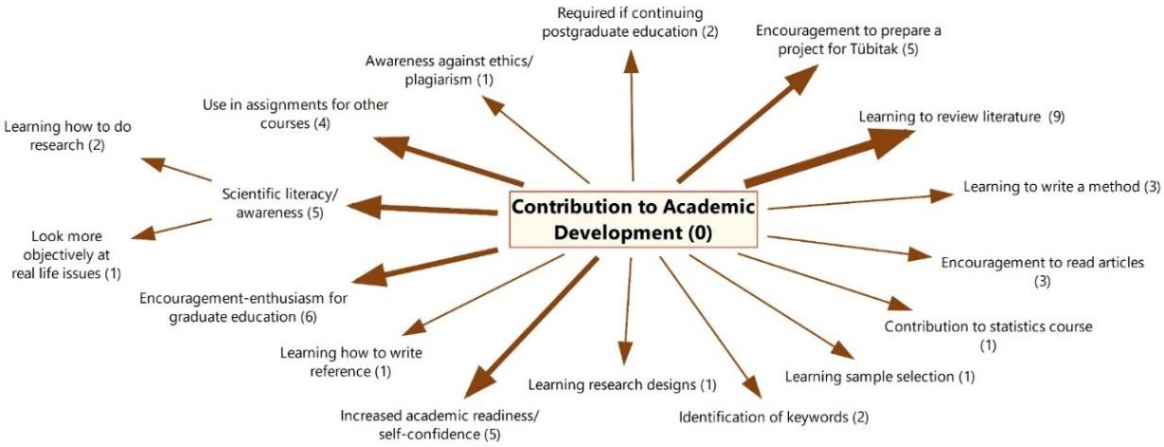

Figure 1. Prospective teachers' views on academic development

When the figure was examined, it was seen that most of the students stated that they especially learned how to search the literature in this course and used this knowledge while preparing the assignments for their other courses. Students also emphasized using what they learned in the course to prepare projects for institutions such as TUBITAK. This course also encouraged some students to pursue graduate education and contributed to their academic readiness and self-confidence. A statement supporting student views on this theme was as follows:

> *S16: "I think it is very useful for me especially in writing a TUBITAK project. I think the information I learned in research methods shed light while doing research, literature review. I really feel more developed. I feel like "I am thinking academically" ... It is definitely important if we are going to do a master's degree."*

Another prominent view was that students' scientific literacy and awareness increased with this course. In this way, students stated that they learned how to conduct scientific studies and that they were able to look at the events they encounter in daily life from a scientific perspective. The statement supporting this view was as follows:

S4: "At least to distinguish whether a study is scientific or not. At the same time, what are the characteristics of scientific research? Knowing these features, we did more accurate research and learned how to do it. We learned the methods of research. We learned that there is a certain sequence and that we should go according to this sequence, and in general, what is scientific research and how is it done? We learned this in this course."

The findings obtained from the instructors regarding the contributions of the Research Methods in Education course to students' academic development are presented in Figure 2.

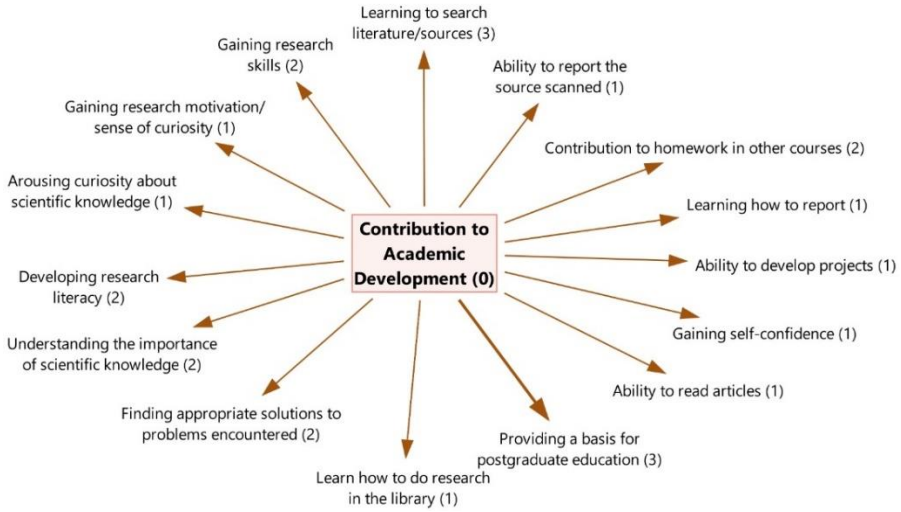

Figure 2. Instructors' views on students' academic development

When the opinions of the instructors regarding the contributions of the course to the academic development of the students were examined, they emphasized that this course would form the basis for graduate education in support of the students' views. In addition, the majority of the opinions were that it contributed to the students in terms of learning how to conduct a literature review. It was also stated by the instructors that this course supports students' scientific literacy and contributes to the academic development of students in the preparation of assignments and reporting of research in other courses. Direct quotations regarding the opinions of the instructors supporting these codes were as follows:

L1: "Also, some of our students are considering doing a master's degree. It will contribute to their academic progress."

L2: "Basically, these students will do homework for 4 years. While doing homework, this course will also form the basis for their homework. Of course, they are also given research assignments in high school, but at university they will try to come up with something more original. In that process, they will do research; they will scan all the literature one by one. I think it is a basic course in terms of learning which sources, articles and books to access more quickly."

Secondly, students were asked about the advantages and disadvantages of taking the "Research Methods in Education" course with face-to-face/distance/hybrid education. The code-subcode models obtained from the students regarding the answers given to this question were given below. The results were as follows for face-to-face, distance and hybrid education, respectively (Figure 3-5):

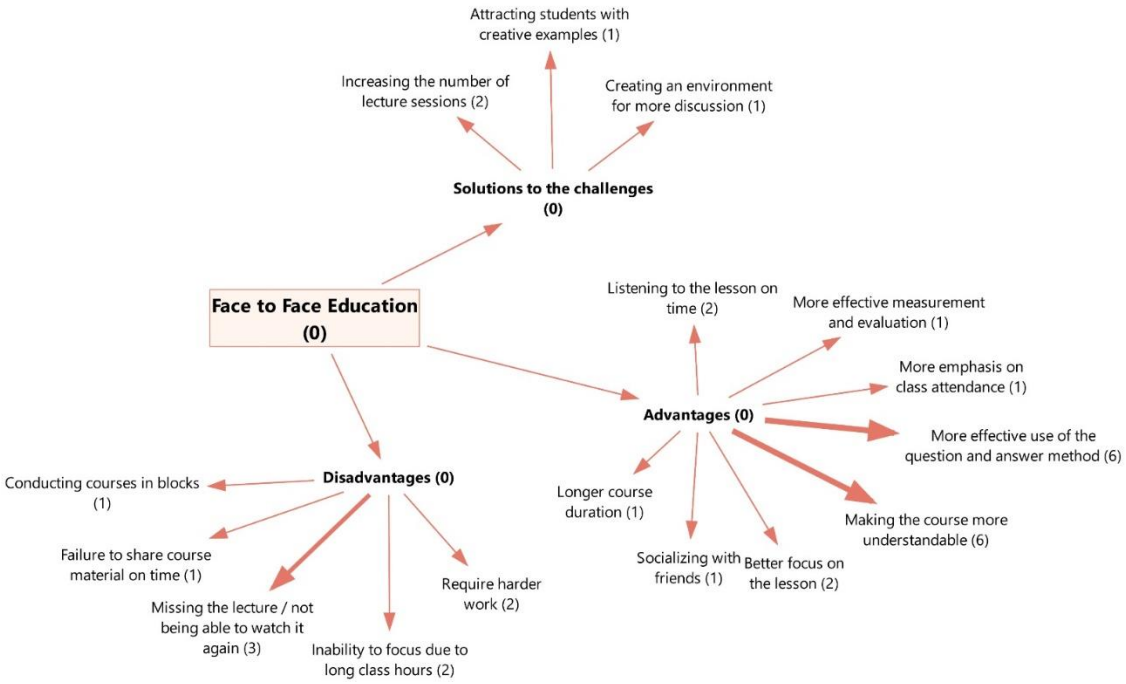

Figure 3. Advantages and disadvantages of face-to-face education for research methods in education course

When the opinions were analyzed, it was seen that the advantage of taking this course face-to-face is that the question-answer method was used more effectively, and the lesson was more understandable. As a disadvantage, they stated that they did not have the opportunity to watch the lesson they missed again and had problems focusing because the lesson was taught without a break. In response to this, they suggested that the lessons should be held with breaks instead of blocks. Direct quotations of student opinions supporting these codes were as follows:

> *S6: "In this course, for example, there were many things that confused me conceptually. When I read from books, I could not understand some things clearly. I could infer different meanings, but since it was face-to-face, there was an opportunity to ask questions instantly, and I tried to make the best use of it. Or I could listen to the questions asked by my friends and remove the question marks in my own mind. This is not possible in distance (education)."*

> *S5: "In terms of class participation. For example, you are not available, you don't want to go that day, but since there are concepts that we encounter for the first time, when you miss the lesson and miss it, you don't understand it the next week. If it were remote, you would listen to the lesson and adapt immediately."*

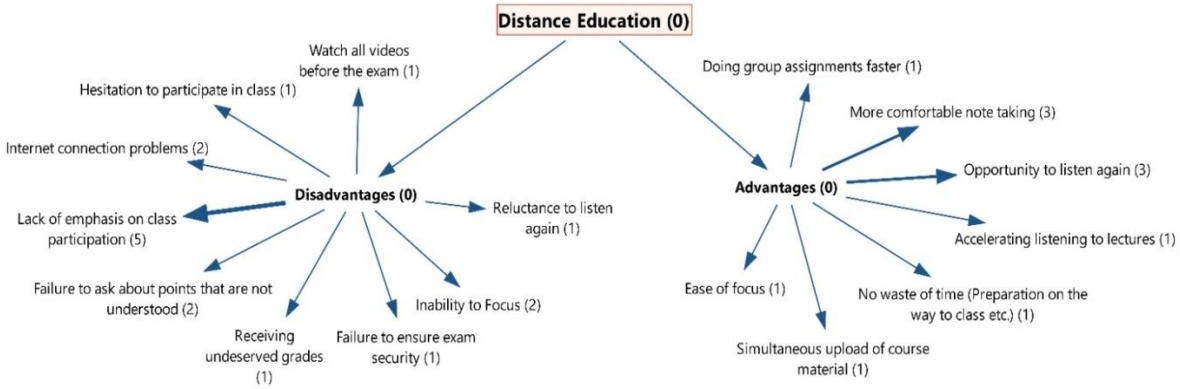

Figure 4. Advantages and disadvantages of distance education for research methods in education course

When the students' views on distance education were examined, some of the students who took this course remotely stated that they could take notes more easily during the course. Some of them stated that having the opportunity to listen to the course again was an advantage. In contrast, they stated that the students' participation in the course was not supported much, which was a disadvantage. In addition, some students indicated that they had connection problems on the internet, while others stated that they could not ask questions that were not understood as a disadvantage. Also, while some students saw distance education as an advantage in focusing on the lesson, others stated it as a disadvantage. The student opinions from which these codes were derived are presented as follows:

> *S14: "As a mathematician, I think I will have trouble focusing because it is a course that is spoken and explained verbally. The fact that I could listen to the instructors again and take notes contributed to me. In addition to this, if my focus problem, for example, if a slow-speaking instructors is lecturing, it will be much more difficult for me to listen to the lecture when I take this course face-to-face, and maybe even I will not understand anything from the lecture, while I think I get much more efficiency thanks to the ability to listen to the instructor over and over again and speed up when I take it remotely for the research methods course."*

> *S1: "Since we are in a home, we are mostly listening in a home environment, so our screen dependency time decreases a lot. We get distracted very quickly. Because there are other individuals at home."*

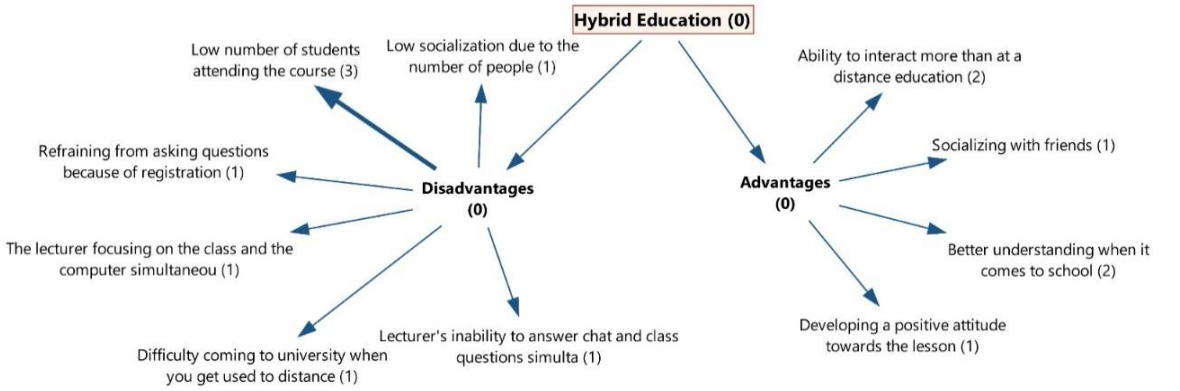

Figure 5. Advantages and disadvantages of hybrid education for research methods in education course

When the student views on hybrid education were analyzed, some of the students who took this course with hybrid education stated that they understood the course better face-to-face when they came to school and that the interaction was more than distance education as an advantage. In contrast, they stated that the number of students attending the course was low as a disadvantage. The low number of students attending the course negatively affected the students' motivation and reduced their focus on the course. At this point, the students stated that the instructors had difficulty focusing on both the classroom and the computer at the same time and that they had difficulty answering the questions from the chat screen in the classroom and distance education at the same time.

> *S2: "I tried to attend most of the courses (face-to-face) again, but since there are very few people in the class, the motivation decreases, so you say why only I am coming."*

> *S13: "Now, there is a computer in front of the instructors, and we are on one side. I mean, should he tell us or them? Should he answer the questions they write on chat? You know, he cannot answer instantly; for example, the subject is passing. So he has to answer later because he sees that message later. Or we were asking the question at that moment, and our instructor's attention had to be divided almost two to three times."*

In addition to prospective teachers' opinions, instructors were also asked about the difficulties they experienced in face-to-face/ distance/hybrid education of the "Research Methods in Education" course. The code-sub-code models obtained from the instructors regarding the answers given to these questions are given in Figure 6.

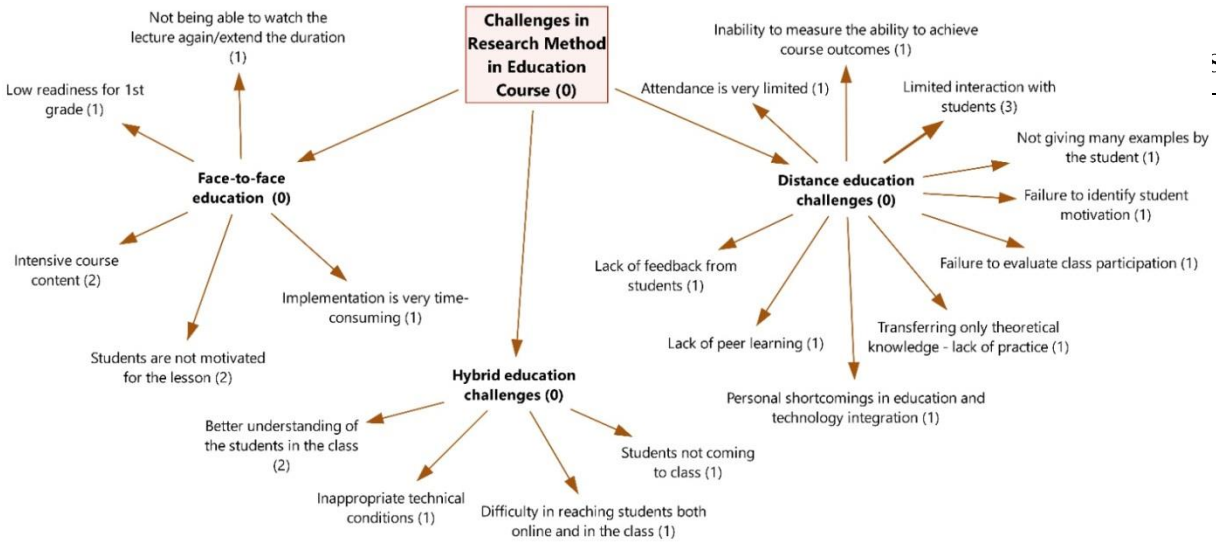

Figure 6. Instructors' opinions on the challenges experienced

The instructors stated that when they taught the course face-to-face, the students were low motivated, and the course content was very intense; when they taught the course in distance education, their interaction with their students was limited; in hybrid education, students in the classroom understood better, but most of the students did not come to class.

Prospective teachers and instructors were asked whether the method in which they took/taught the "Research Methods in Education" course affected the content of the course, the teaching methods and techniques used in the course, students' attendence in the course, and the measurement and evaluation techniques used in the course. The codes related to the method of taking/teaching the course and the frequencies of these codes were given in Table 2 and Table 3, respectively.

Table 2. Prospective teachers' opinions on course content, teaching, attendance and evaluation

Theme	Code	Subcode	f
Course content	The scope would be narrow in distance education		14
	Less interaction/wider scope in distance education		1
	Topics would be more understandable in face-to-face education		3
	Would not change		5
Teaching methods and techniques	Depends on the instructor not the method		2
	If it is distance	More direct instruction	7
		Examples may not be given	1
	If it is hybrid	Not suitable for group work	1
		More suitable for group work	1
		Being technology-supported	1
	In terms of question-answer method	Difficult to ask questions face-to-face (chat was active)	1
		Questions are not answered in distance education	1
		No answer is expected in distance education	2
		Question-answer method do not turn into an argument in distance	2
Attendance	Face-to-face	Attention to absenteeism/fewer	3
		More participation	6
	Distance	More participation	2
		Less participation	16
	Hybrid	Low number of students attending the course	1
		Low number of hybrid courses	1
		More participation in the face-to-face part	2
Measurement and evaluation techniques	Depends on the instructor not the method		2
	For face-to-face education,	Class participation can be graded	3
		More effective feedback	1
		Quizzes instead of question-answer method	1
		More objective in-class assessment	1
		More emphasis on formative assessment	1
		Better learning with exams	1
	For distance education,	Increased probability of cheating	3
		Failure to show what you know	1
		No quizzes and no studying	2
		Failure in formative and summative assessment	3
		Questions from topics not covered in course	1
		Homework instead of an exam	1

When the student responses regarding the content of the course were examined, the majority of the participants stated that the content would be narrower if the course was taught through distance education. It was stated that distance education involved more direct instruction, making it easier to ask questions in the chat during the question-and-answer method compared to face-to-face education. However, it was also noted that there was no waiting time for responses and no in-class discussion environment. In hybrid education, one of the participants stated that this application was not suitable for group work, while another stated that it was more appropriate for group work. In terms of class attendance, the majority of the group stated that class attendance was less in distance education, while more attention was paid to this issue in face-to-face education. In terms of measurement and evaluation, students stated that in face-to-face education, process evaluation would be more objective, class participation could be graded, and better learning would be achieved. On the other hand, they emphasized that in distance education, the possibility of cheating in exams increases and there were problems in formative and summative assessment.

S5: "In face-to-face education, you can have an opinion grade from the instructor with both class participation and evaluations in the process. The instructor uses these when evaluating, but in distance education there is only midterm and final. The instructor does not even see your face and does not know you. There is no bond between you. So even if you are a very good student, you can go to the internet during the exam and be considered unsuccessful."

Table 3. Instructors' opinions on course content, teaching, attendance and evaluation

Theme	Code	Subcode	f
Course content	Same course content/ syllabus		2
	Face-to-face	More examples	3
		Effective use of worksheets	1
		More detailed explanation	1
	distance	Ineffective use of worksheets	1
		Less content	1
		Convenience of screen sharing	1
Teaching methods and techniques	Hybrid is the same as distance education		1
	Face-to-face education	Group work	1
		Assigning a research paper/checking in class	1
		Question-answer method	3
		Giving more examples	1
		Teacher-centered/ Direct instruction	3
	Distance education	Teacher-centered/ Direct instruction	4
		No research assignment	1
		Examples	1
		Limited question-answer method	2
Attendance	Face-to-face education	High interaction	2
		Group work is more feasible	1
		Learning/curiosity from each other's questions	1
		Influencing each other in listening to lectures	1
		Engaging with/listening to the lesson	2
		More question-answer /participation	2
	Distance education	Giving up asking questions after a while	1
		Low level of participation	2
	Hybrid education	Encouraging those who come to the class	1
		Upset students who cannot come to class	1
Measurement and evaluation techniques	Would not change		1
	Face-to-face education	More objective/higher validity	1
		Inclusion of class participation in scoring	2
		Evaluation is both formative and summative	1
		More homework-take home	2
		Multiple choice exam	1
	Distance education	Exam security is suspect	1
		Only midterm-final	1
		Multiple choice exam	1
		Assignments for raising the grade	1
	Hybrid education	Multiple choice exam	1
		Assignments for raising the grade	1

According to the opinions of the instructors, the content and syllabus were the same in all education practices. Still, more examples were given and more detailed explanations were made in face-to-face education. In terms of teaching methods and techniques, it was observed that both face-to-face and distance education adopted a teacher-centered approach, but the question-answer method was frequently used in face-to-face education. It was emphasized that hybrid education was similar to distance education. Opinions of the instructors indicated that the participation and interaction in face-

to-face education were higher and that students positively affected each other at this point. In distance education, participation remained at a low level. In hybrid education, it was stated that students motivated each other to come to the class and that students who could not physically participate in the class experienced sadness at this point. Finally, in the measurement and evaluation section, it was stated that more valid evaluations could be made for both process and outcome in face-to-face education. It was also stated that in all three educational practices, homework assignments were given in addition to multiple-choice exams, and the measurement and evaluation processes were similar.

> *L2: "In face-to-face (education), I used direct instruction and giving examples. I mean, I also proceeded based on examples, and I also proceeded with questions and answers. We also benefited from research. Students did research, then we looked at them in class. We definitely used the lecture-based (method) at distance (education). I (used) question and answer more limited compared to face-to-face. Again, I used examples, but as I said, of course, I ask more face-to-face, especially when waiting. We used it more there. I did not assign research homework in distance. There is no difference in hybrid; hybrid and distance are very similar."*

> *L3: "For the research methods course, in this course, we do multiple choice midterm and final. It is similar. In addition, we (give) homework review."*

The students were asked whether they preferred to take the "Research Methods in Education" course using a different method than the one they had taken. The code-subcode model obtained from the students regarding the answers to this question was shown in Figure 7.

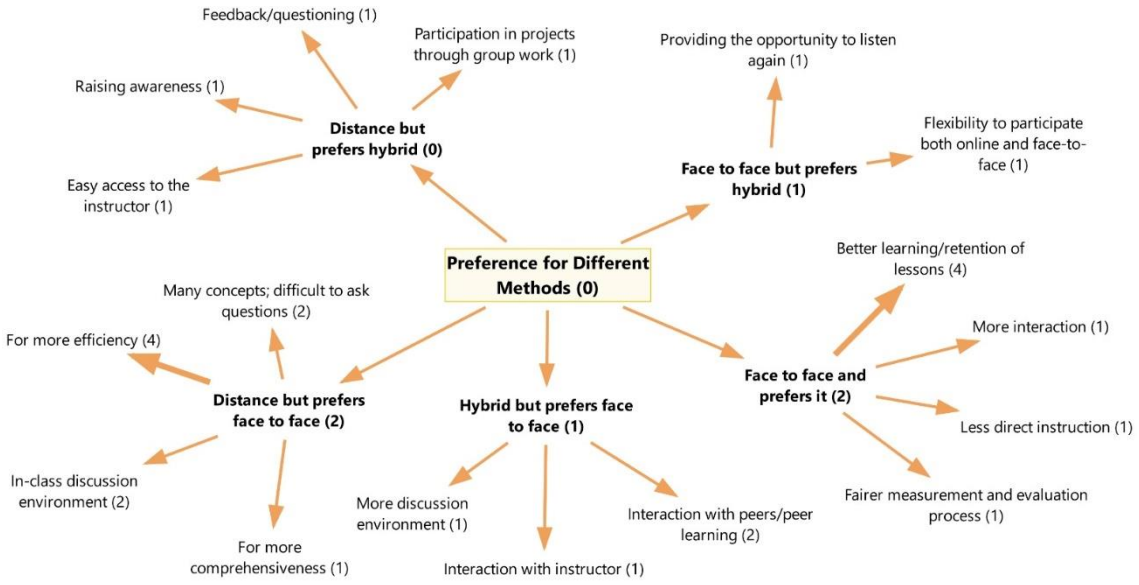

Figure 7. Students' preference for taking the course with a different method

When the students' opinions on the question regarding their preferences for different educational practices were analyzed, it was seen that students who received both face-to-face, distance and hybrid education preferred to take this course face-to-face. For all three groups, more effective/memorable teaching and more interaction with peers/instructors were cited as the reasons for preferring face-to-face education. While none of the students preferred distance education, they preferred hybrid education that combined the advantages of distance education and face-to-face education. Hybrid education was preferred because it combined the advantages of having the flexibility to attend classes

from home in distance education and taking part in group studies (projects, etc.) due to peer and instructor interaction in face-to-face education.

5. CONCLUSION, DISCUSSION AND SUGGESTIONS

Within the scope of this study, the opinions of students and instructors on the teaching of Research Methods in Education course with different educational practices were determined. Five main themes were obtained as a result of the research. These themes were: 1) The contribution of the course to academic development, 2) Advantages and disadvantages of educational practices, 3) Challenges experienced by instructors in educational practices, 4) Course content, teaching and assessment, and 5) Preferences for a different education practice.

Regarding the course's importance to students' academic growth, teachers' and students' perspectives typically coincided. Students and instructors both emphasized that the knowledge and skills acquired in the course contribute to academic development in terms of preparing assignments for other courses, projects and readiness for graduate education. In the literature, there were quantitative and qualitative studies on the effectiveness of the research methods course with undergraduate and graduate students in different departments (Akgün, 2012; Aksu, 2018; Ayaydın & Kurtuldu, 2010; Çetin & Dikici, 2014; Holmes & Reid, 2017; Tomakin, 2007). Similar to the results of this study, in a study conducted with graduate students, when the research methods in educational sciences course were examined, it was determined that it contributed to students in determining the method-technique, research question and data collection tool, literature review, validity, reliability and ethics concepts, that is scientific research steps (Çetin & Dikici, 2014). Besides, there were also studies examining the opinions of prospective teachers in different branches about the research methods course (Akgün, 2012; Aksu, 2018; Ayaydın & Kurtuldu, 2010; Kurt et al., 2011). According to the students' opinions, it was found that the Research Method course was important in raising awareness about graduate education, becoming aware of the qualities of scientific studies, using what they learned in the teaching profession, and using what they learned in research and homework preparation (Akgün, 2012). In a study examining prospective teachers' attitudes towards the Research Method course, it was observed that students generally agreed that the course was important and necessary for all fields (Ayaydın & Kurtuldu, 2010), while in another study examining student views on the Research Method course, students generally reported that this course increased their problem solving skills and that what they learned in the course would be helpful for their homeworks (Kurt et al., 2011). Although prospective music teachers thought that the Research Method course would contribute to their article writing and personal development, it was found that most of them believed that academicians, not teachers, should enroll in this course (Aksu, 2018). In the present study, some prospective teachers believed that the Research Method course is necessary for those who will continue their postgraduate education. The answers to this question were largely in line with the studies in the literature. The contribution of the Research Method course, especially in terms of awareness of the scientific process, using what they have learned while preparing homework, and awareness and preparation for graduate education, is also supported by previous studies. In addition, among the students interviewed, especially those who took the course emphasized the contribution of this course in participating in the TÜBİTAK 2209-A project, and the majority of them stated that they applied to the projects opened under this title. As stated by Tomakin (2007) and Çepni (2010), the students taking the Research Method course should adopt a researcher-teacher approach, and university students should be trained as researchers. In this study conducted with prospective teachers from different departments of the Faculty of Education in line with these objectives, students' views on the steps of scientific research and research projects were concluded that the course serves this purpose.

The opinions of the students who took this course with different educational practices were mostly supportive of each other. While the inability to listen to the lecture again was a disadvantage in face-to-face education, this was expressed as an advantage for students in distance education. In

addition, students stated that they took notes more easily in distance education. Flexibilities such as listening and more comfortable note-taking, which were among the biggest advantages offered for the quality of distance education (O'Lawrence, 2005; Yağan, 2021), support this finding of the study. In addition, students who took the course with face-to-face education and hybrid education stated that the question-answer method was used more effectively in the classroom environment and that the course was more memorable in this way as an advantage. In support of this finding, Gündüz et al. (2023) found that lack of interaction/communication and loss of motivation were among the difficulties encountered in the distance education process. In contrast, students who took the course with distance education stated that participation in the course was not supported and the points that were not understood could not be asked. In addition to student opinions, instructor opinions were also in this direction. Accordingly, the instructors believed that the interaction with the students is limited when the course is given through distance education. This restriction also had an impact on how effectively the lesson is taught. According to a study by Hebebci et al. (2020), instructors also expressed dissatisfaction with the lack of interaction in the distance learning process. There were different opinions about focusing on the lesson. Although they took the course in different educational environments, students stated that they had focusing problems in all cases. The possible reason for this situation is thought to be related to the content of the course rather than the educational environment in which the course is taken. In a research (Akgün, 2012) in which prospective teachers' opinions about the research course were taken, the participants stated that this course should be spread over two semesters to teach it more effectively. The fact that the course content is quite intensive may have caused focusing problems for students taking this course both face-to-face and distance education.

When the results were analyzed in terms of hybrid education, both students and instructors agree that face-to-face attendance was very low. In the hybrid education process, students were given the flexibility to participate face-to-face. The results obtained from the study indicated that the majority of the students did not prefer face-to-face attendance. The reason for this situation may be that students do not have clear information about hybrid education. In the study conducted by Yurdakal and Susar-Kırmızı (2021), it was revealed that the majority of the prospective teachers who participated in the study did not know about hybrid education; some of them had heard of hybrid education but did not know its content. The fact that students had no idea about this issue may be one of the reasons why they did not prefer face-to-face participation in the hybrid education process. Another result obtained at the point of hybrid education was that instructors had difficulty in keeping up with the students both in the classroom and in the online environment at the same time, and this view was expressed by both students and instructors. According to these results, it was recommended that more in-depth studies should be carried out in order to increase the awareness of hybrid education at the higher education level in the future and to reveal the problems experienced in the process more clearly.

It was seen that the opinions of students and instructors support each other in teaching the course. It has been concluded that the course content is enriched in face-to-face education, especially in terms of examples, and that in educational practices, direct instruction and question-answer methods were generally used, but the question-answer method did not work very effectively, especially in distance education. Similarly, participation in the course is more limited in distance education in terms of both class attendance (absenteeism) and active participation. In terms of assessment practices, it was stated that the exams conducted in distance education were more open to cheating. As a similar finding, in the study conducted by Gündüz et al. (2023) with pre-service students reported that there were difficulties regarding exam security or cheating. Also, especially formative assessment is more appropriate in face-to-face education. Holmes and Reid (2017), who compared the effectiveness of face-to-face and distance education practices in learning outcomes in a research methods course, found no significant performance difference between the two groups. Both groups of students scored

significantly higher on the post-test compared to the pre-test. However, the effectiveness of the course was evaluated only on the basis of the achievement grade, and no comments were made on the teaching and process. Among the findings of the current study, the relative inadequacy of course content in distance education, the fact that distance education was not very suitable especially for applied courses, inefficiency and decrease in comprehensibility were similar to Han and Demirbilek (2021) study in which university students' views on distance education were investigated. Distance education generally limited students' communication with each other and instructors (Bestiantono et al., 2020). As clearly emphasized in the results of the study, most of the students stated that participation in the course and interaction during the course were very limited in distance education. This situation has also been revealed in many previous studies on distance education (Han & Demirbilek, 2021). As Lee et al. (2022) pointed out, online assessment can be challenging for both instructors and students due to technical, academic and ethical issues. Exam security is a prominent problem, especially in online exams. In a study by Costley (2019), nearly 60 percent of students admitted to cheating on online assessments. In this study, the vulnerability of online exams to cheating was frequently emphasized by instructors.

Finally, the students were asked which educational practice they preferred to take this course, and it was concluded that the majority of the participants preferred to take this course face-to-face. These findings were in line with the findings of other studies in the literature. Considering the problems in the realization of applied courses with distance education (Yurdakal & Susar-Kırmızı, 2021), it can be expressed as an expected situation that students have an opinion on this method.

In summary, this study gathered the perspectives of both students and instructors on different educational practices used in the Research Methods in Education course. When their opinions were evaluated together, two major challenges emerged: the inability to listen the course again in face-to-face education and the lack of participation and interaction in distance education. Additionally, in hybrid education, instructors supported students' concerns by stating that they struggled to keep up with both in-person and online students simultaneously.

Overall, when analyzing students' and instructors' views on course content, teaching, and assessment, hybrid and distance education were often discussed together. For instance, perspectives on teaching methods and techniques in distance education were also applicable to hybrid education. One key area where students and instructors shared similar views was course assessment. Both groups agreed that evaluations would be more objective in face-to-face education and that participation could not be effectively graded in distance education, whereas it was feasible in face-to-face settings. Exam security in distance education was another common concern raised by both groups.

Based on these findings, one key recommendation is that courses combining theoretical and practical components, such as Research Methods in Education, may be more effective when taught face-to-face, particularly in terms of fostering interaction and communication. Additionally, when distance education is implemented, educators should take necessary precautions to enhance the effectiveness of the question-answer method, encourage participation and interaction, maintain student motivation, ensure exam security, and integrate formative assessment strategies.

Ethics Committee Decision

This research was carried out with the permission of Gazi University Publication Ethics Board with the session numbered 2023/677877 dated 12.06.2023.

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