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Complaint
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Investigation of Effective Teaching According to Pre-Service Teachers' Views and Their Teaching Methods

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Abstract
The study examined how prospective teachers defined effective teaching, the methods and techniques used by pre-service teachers during their teaching practicum and their reasons to use them, and how these instructional techniques fit specific teaching principles. The participants in this study were 18 university seniors registered in the Primary Education Department at a state university. The data for this qualitative study were obtained from an information form completed by participating pre-service teachers, their prepared lesson plans, video recordings of practicum teaching experiences, and observation notes. The collected data were analyzed through descriptive analysis. Findings showed that pre-service teachers often mentioned following a student-centered approach. They emphasized the roles of an effective teacher as using different teaching methods, techniques, and materials, as well as guiding students, making learners more active, and paying attention to students' individual differences. In terms of students' roles in effective teaching, they mentioned students should actively participate in class, take responsibility for learning, think critically, and transfer their learning to new situations. It was determined that pre-service teachers had sufficient knowledge of the selection of methods and techniques. Pre-service teachers frequently included the 5E learning cycle model, question-answer, and drama methods in their lessons. In their suggestions, teachers frequently included the 5E learning cycle model, question-answering, and drama methods in their lessons. The findings of the study were that pre-service teachers should be generous in providing feedback to learners while they are teaching their lessons, and courses should be taught with a student-centered approach by using different methods and techniques, as well as being supported with visual elements. Additionally, pre-service teachers should be supported in using the theoretical knowledge they have learned in their courses and extending the period of teaching time within the scope of teaching practicum courses.

Keywords: Effective teaching, Pre-service teacher, Teaching methods, Teaching practicum course

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Introduction

Individuals learn in different ways, and the use of a single teaching method for teaching every subject may not always lead to success. Therefore, to ensure effective teaching, it is important to utilize a variety of teaching methods and techniques. Effective teaching requires knowledge and understanding of the subject, as well as an understanding of the needs and learning styles of individual students. Additionally, teachers must be flexible, creative, and willing to experiment with different teaching methods to keep their students active during the learning process (Dogani, 2023). Therefore, effective teaching refers to the teaching activities that promote students' learning and development through effective preparation, teaching activities, and evaluation. In other words, effective teaching is not only a teaching idea but also a teaching method and teaching skills (Zhao, 2023).

Teaching methods are consciously selected and monitored paths used to achieve goals such as solving a problem, concluding an experiment, learning a subject, and/or teaching a subject (Oğuzkan, 1993). In other words, a teaching method can be defined as the shortest way to achieve a specific instructional goal (Demirel, 2015). Technique, on the other hand, is the application of a method (Saygılı, 2015). As a result, the common function of teaching methods and techniques is to make learning objectives achievable (Gözütok, 2017). Teaching methods can vary from traditional approaches, in which students are passive while the teacher is in charge, to contemporary approaches, where the learners' interests and levels of thinking are considered (Burden & Byrd, 2010). In choosing a method for use in teaching, many factors, such as the teacher's knowledge of methods, infrastructure of the school, materials provided by the school, number of students, targeted goals, characteristics of the subject, readiness level of the students, as well as the time and cost involved, must all be taken into consideration (Aydın, 2022; Aykaç, 2009).

The courses of Teaching Practicum I and II, which are included in the teaching profession courses of the primary school teacher training program, are conducted for a total of eight hours per week, with two hours devoted to in-person university course lectures and six hours per week spent in teaching practicum courses within primary school classrooms. Within the scope of the Teaching Practicum I course, pre-service teachers are required to visit schools, meet with teachers, examine yearly plans, review teachers' seminars, observe different subjects (classroom management, asking questions, etc.), prepare worksheets, and prepare assessment materials. They are also required to prepare daily lesson plans and an evaluation report for any activities carried out during the semester, and ultimately organize all their reports and activities into portfolios for review. Within the scope of the Teaching Practicum II course, it is also necessary to visit the school and meet teachers, students, and administrators. This is done to determine the time and topics of lessons they are to teach during their teaching practicum school visits. After pre-service teachers complete two weeks of observation, they then teach lessons every week under the supervision of an assigned classroom teacher and in accordance with the guidelines set forth by the course instructor from their faculty (Council of Higher Education, 2019).

In Türkiye, the general competencies and special field competencies for the teaching profession were determined through meetings and workshops held in participation with the Ministry of National Education Directorate of Teacher Training and Education as well as several experts and teachers as a way of reaching a compromise regarding qualifications for graduating pre-service teachers from every education faculty throughout the country (MoNE, 2006). In 2017, the General Directorate of Teacher Training and Education of the Ministry of National Education updated their general qualifications for the teaching profession under the headings: (1) professional knowledge; (2) professional skills; and (3) attitudes and values. In this current study, in connection with the teaching practicum course, the researchers focused on the area of professional skill competence and, in doing so, paid special attention to the areas of planning teaching and managing learning time. It was thought that in the Teaching Practicum course, the performance of pre-service teachers in these two sub-competency areas could be improved, observed, and evaluated.

When research on this subject is examined, it is emphasized in some of the findings that pre-service teachers do not consider themselves competent in using modern teaching methods and techniques. For example, in Soylu's study (2009), while mathematics pre-service teachers find themselves competent or partially competent in using lecture as well as question-answer methods and techniques for mathematics instruction, they believe themselves to be inadequate in approaches, methods, and techniques such as the constructivist approach, learning through discovery, cooperative learning, demonstration, educational games, case study, and posing and solving problems. In another study, pre-service teachers state that teaching should be done in a way to make students active in accordance with the constructivist approach. However, after examining the records of these pre-service teachers'

classroom teaching activities, it is observed that 66% of the teaching methods applied in the classroom are traditional methods, 17% are teaching methods that exemplify the constructivist approach, and the remaining 17% are mixed methods (Çam, 2015). In a similar study, mathematics and science pre-service teachers emphasize that teaching should be student-centered but instead choose more traditional methods because of the high number of students in class as well as having a heavy curriculum load to cover (Özgün-Koca & Şen, 2006). Chai, Teo, and Lee (2010) also state that pre-service teachers who believe that information will be transferred directly prefer to use traditional teaching methods, while those who focus on the process and efforts of students support teaching methods following the constructivist approach. In Demircioğlu, Genç, and Demircioğlu (2015), the knowledge of university seniors from the Social Studies Education Program about teaching strategies, methods, and techniques is investigated. It is determined that pre-service teachers have general knowledge about teaching strategies, methods, and techniques that are an important part of pedagogical content knowledge; however, those same pre-service teachers have problems listing the methods and techniques used in teaching approaches such as teaching through discovery, lecture, and inquiry. In addition, it is understood that pre-service teachers have difficulty defining the concept of teaching strategy but can explain the concept of teaching techniques.

It is shown in studies where the relationship between theory and practice in teacher education is examined that a balanced link can be established between theory and practice when theoretical knowledge is applied in real learning conditions and/or within classrooms, as well as when discussions about the practices being used are carried out during the lessons (Beck & Kosnik, 2002). In a similar study, Sunal (1980) finds that primary school pre-service teachers who learn lessons about teaching methods in practice schools are more successful in their teaching skills than pre-service teachers who learn lessons about teaching methods at the university campus. Ünver (2014) emphasizes the fact that faculty members present exemplary practices that require the use of the theoretical knowledge they teach and that they conduct applied studies with pre-service teachers in order to effectively establish a link between theory and practice. In Şahin and Kartal's study (2013), pre-service teachers and newly graduated teachers emphasize that to make the profession more successful, teaching courses should be based on practice rather than theoretically taught in university classrooms. In Koçak, Yıldırım and Mindivanli-Akdoğan's study (2023) on pre-service teachers' opinions regarding the Teaching Practicum Course, Participants in the study came from various teaching departments and mentioned that they were able to put their theoretical knowledge into practice and were able to use several teaching methods. Similar findings were obtained in Zeybek and Karataş's (2022) study with pre-service teachers from different teaching departments. However, Akgül, Ezmeci, and Akman's (2020) study of early childhood pre-service teachers stated that their undergraduate courses were theoretical. Due to a lack of experience with activities throughout the courses, they had difficulty during their teaching practicum courses. Thus, as Hoban (2005) stated, university and school cooperation should be provided to fill the gap between theory and practice because one of the main factors for success in teacher education is ensuring this cooperation.

In a review of other studies, the effects of teaching profession courses on pre-service teachers' competencies for the teacher-learning process (planning, application, and evaluation) were found to lead pre-service teachers to gain about half of the performance indicators for the teaching-learning process (Atik Kara & Sağlam, 2014). In another study, after completion of a teaching practicum course, pre-service teachers thought that they were successful in motivating students, being good listeners, and explaining complex topics, but they also stated that they had difficulties in writing lesson plans as well as planning and implementing activities that made students active (Ng, Nicholas, & Williams, 2010).

In Arıkan's study (2009), it is shown that these pre-service teachers mostly use the lecture method (n = 28) and the question-answer technique (n = 24). Aslan and Zırhlıoğlu's (2019) study of pre-service teachers critiqued themselves for not using different teaching methods during their teaching practicum courses. In another study, Turkish language pre-service teachers criticized language arts teachers for using mainly direct instruction and question-and-answer techniques (Toksun, 2020). In another study, Bilen (2014) finds that students in the Primary School Mathematics Teacher Department mainly use the question-answer technique when teaching, while students in the Instructional Technologies Department use educational technologies and visual aids. As seen in previous research, the methods and techniques used by prospective teachers are extremely limited.

Purpose of the Study

As a result of examining related research, it was observed that there was a dearth of studies regarding the variety of teaching methods used by pre-service teachers as well as whether these teaching methods have been used effectively. This statement was also posited in other studies (Şallı-Çopur, 2008; Yıldırım, 2013). However, it was important to determine how pre-service teachers chose specific theoretical approaches, methods, and techniques that they had learned through their courses, as well as how they planned to implement their choices into their

teaching practicum. Also important was how pre-service teachers reflected on the approaches, methods, and techniques they had used for practicum instruction. Importantly, in studies carried out by the Ministry of National Education to determine the general competencies for the teaching profession, the competency areas were updated, and in particular, one competency of interest was professional skills, which includes planning instruction as well as managing the teaching and learning processes (MoNE, 2017). As part of their teacher training, pre-service teachers are expected to perform and achieve certain performance levels in each of these proficiency areas. As a result, it is important for pre-service teachers to obtain these expected qualifications during the teaching-learning process.

It is important and necessary that there is a link between theory and practice so that the knowledge and skills learned in teacher education programs are not only effective but also retained. Therefore, in this current research, the purpose was to determine which approaches, methods, and techniques were used by pre-service teachers during the teaching portion of the Teaching Practicum II course. For this reason, the researchers in this study observed pre-service teachers' teaching practices as well as reviewed their lesson plans. The following research questions were considered to carry out the stated research purposes:

1. How do pre-service teachers describe effective teaching?
2. What did pre-service teachers take into consideration in choosing teaching methods?
3. What were the methods and techniques used by pre-service teachers when teaching courses?
4. Were the methods and techniques pre-service teachers used during their teaching practicum appropriate to the teaching principles (i.e., purposefulness, being relative to students, making students active, and being concrete)?

Method

In this qualitative study, data was collected and analyzed through a case study. A case study is an empirical research method that studies a current phenomenon within its own context. It is used in cases where the boundaries between the phenomenon and its context are not clear and there is more than one evidence or data source (Yıldırım and Şimşek, 2021). This study was designed according to the holistic single-case design, in which there is a single unit of analysis (such as an individual, school, program, or institution) (Yıldırım and Şimşek, 2021). In this research, the practices of pre-service teachers in a classroom teaching program at a faculty of education, where they used various approaches, methods, and techniques within the scope of the Teaching Practicum II course, were accepted as a unit of analysis. In this study, the stages that needed to be followed for a case study, such as developing research questions, determining the units of analysis, determining the situation to be studied, selecting individuals to participate in the research, collecting, analyzing, interpreting, and reporting the data, and reporting, were followed.

The data for this qualitative study were obtained through observation and document analysis. Pre-service teachers' in-class teaching practices were observed, and video recordings were made of the observed classroom instruction and activities. The information form, lesson plans, and field notes were obtained and analyzed via document analysis.

Participants

Participants in this study consisted of 18 pre-service teachers who studied in the Department of Primary Education at a Turkish state university and were enrolled in the Teaching Practicum II (TP II) course. Participant students (12 female and 6 male) were determined on a voluntary basis. Most of the participants were women, which was due to a greater number of female students being enrolled in the primary education department. The ages of students varied from 21 to 24, with the median age being 23.5. Academic achievement scores for the participants varied from 2.66 to 3.33 (the median achievement score was 2.95).

For expediency and practicality, a criterion sampling method that is one of the purposeful sampling methods and a convenient sampling method was utilized to conduct the research as well as help the pre-service teachers feel more comfortable and behave naturally by working with familiar instructors (Yıldırım & Şimşek, 2021). Criteria for choosing participating students were previously taking and successfully passing the teaching methods and principals course, enrolling in the TP II course, going to primary schools once a week, and volunteering to participate in this research. Each participant was informed that they would be observed at least once during the

semester while enrolled in the TP II course. The pre-service teachers were each observed for at least 40 minutes at a time, and they chose when and which course or subject they preferred to teach.

Data Collection

In this qualitative study, pre-service teachers' teaching practices were recorded, and their written lesson plans were reviewed. Data from the study was collected through real-time video recordings of pre-service teachers' lessons as they were presented during their teaching practicum lessons. Also, an information form was completed by each participating pre-service teacher, and field notes were compiled by each researcher according to field observations they made during the pre-service teachers' teaching practicum lessons.

The information form consisted of two parts and was prepared by the researchers. The first part of the form contained demographic information, while the second part contained three open-ended questions: a) how pre-service teachers defined the nature of effective teaching; b) the desired roles of teachers and students; and c) what they paid attention to when selecting teaching methods. In the preparation and finalization of the form, both relevant research findings and expert opinions (from a faculty member working in the field of primary education, a faculty member working in the field of program development, and a faculty member working in the field of measurement and evaluation) were taken into consideration.

Each pre-service teacher was observed during their presentation of classroom instruction on a specified date of his or her choice, and the classroom observations lasted for approximately 40 minutes. Prior to the researchers' field observations, the pre-service teachers were asked to prepare a lesson plan that they would follow during their classroom instruction while the researchers observed their lessons. In addition, all lessons observed by the researchers that had been prepared and carried out by the participants were video recorded. Throughout the lessons, the researchers also kept field notes.

Data Analysis

The data obtained from the field observation video recordings, the researchers' field notes, and the information form completed by the participants were analyzed through descriptive analysis. The lessons prepared and presented by the participants were video recorded, and throughout the course, researchers took specific field notes regarding their in-class observations. According to the research protocol outlined in descriptive analysis, a framework was first created, data was processed according to the thematic framework, and findings were identified and then interpreted (Yıldırım & Şimşek, 2021). Depending on this analysis technique, themes were created in relation to research questions established in advance. Findings are defined and interpreted under relevant themes. In addition, the teaching videos of all pre-service teachers and written lesson plans were individually reviewed and coded by two researchers according to the established research questions. The consensus between the two researchers was found to be 96%. According to Yıldırım and Şimşek (2021), the interrater reliability level should be at least 70%. Thus, in this study, it can be said that the level of internal reliability was high. While analyzing the field observation video recordings, the field notes from each researcher were also analysed by both researchers.

As a result of the descriptive analysis, frequencies and percentages related to the data were determined. While defining the findings, examples regarding specific themes are provided in the relevant tables. Since each participant listed more than one method and/or technique to be utilized for instruction, the answers provided in the presentation of some findings were greater than the total number of participants. The first and second research questions were answered through data collected from the prepared information form, while the third and fourth questions were answered via classroom observations as well as information gathered through video recordings and field notes from the participants' classroom instruction. Since the data of this study were collected before 2020, Ethical Approval was not obtained.

Results and Discussion

In this qualitative study, the approaches, methods, and techniques utilized by pre-service teachers during their teaching practicum internships, how pre-service teachers determined effective teaching, and what roles students and teachers desired were examined. The findings of the study were presented in line with the research questions. The answers provided to the first research question, *"How do pre-service teachers describe effective teaching?"* are listed in Table 1.

Table 1. Definition of effective teaching according to pre-service teachers

Expressions Used to Describe Effective Teaching	f
Being student-centred	6
Using different teaching methods, techniques, and materials	
Being compliant with program requirements and expected gains	4
Ensuring learning through hands-on experiences	
Ensuring teacher control	2
Considering individual differences	
Motivating students	
Being planned	
Providing a democratic environment	
Ensuring teacher-student interaction	
Being interesting	
Not being based on memorization	
Enabling the discovery of information	1
Being suitable for teaching principles	
Providing process-based evaluation	
Being associated with daily life	
Combining theory and practice	
Managing time effectively	
Realizing the social and affective characteristics of learners	
Considering learners' levels of development and readiness	

In this study, as it can be seen in Table 1, the most important feature reflected by the pre-service teachers regarding effective teaching is being student-centered (f = 6). In terms of being student-centered, one of the pre-service teachers stated that, *"In my opinion, the most basic principle of effective teaching is to be able to convey to the audience that they have to learn this information, to inform them where and how to use this information, and to motivate them."* Using different methods and tools was emphasized by a total of four pre-service teachers. However, other important features such as motivating students, being planned and programmed, providing a democratic environment within the classroom, providing effective teacher-student interaction, being practical, discovering information, evaluating the process, being associated with daily life, using time effectively, and being aware of the individual differences of learners were each mentioned once. Effective teaching also means that the teaching is appropriate according to the targeted subject or achievement, the students' previous knowledge, and their learning level. Basic concepts in effective teaching focus on: (1) active learning time and the quality of teaching; (2) conducting teaching as a manageable activity; (3) necessary skills teachers should have; and (4) choosing activities according to students' motivation, attention level, interests, and needs (Kyriacou, 2010). Active learning time is considered to be motivated by the voluntary participation of students throughout the lesson. The skills a teacher should have for effective teaching include planning and organizing teaching, identifying and using methods to achieve maximum learning, monitoring and evaluating student learning, communicating effectively, motivating students, managing the classroom effectively, and working on improving students' learning and achievement (Irnidayanti & Fadhilah, 2023; Lai & Peng, 2020; Moore, 2014; Moore, 1989). In addition to these features, Strong, Gargani, and Hacıfazlıoğlu (2011) also emphasize being able to use technology effectively, developing high expectations for learning, and being sensitive not only to academic but also to the social and individual needs of learners. According to Moore (2014), the components of effective teaching are having field knowledge, ensuring active learning, and using teaching methods and strategies. It is seen that the answers of pre-service teachers who participated in this study were in line with these components.

Pre-service teachers were also asked to list what roles teachers and students should have for effective teaching. Their responses regarding the role of teachers in effective teaching are provided in Table 2.

Table 2. Teachers' roles in effective teaching according to pre-service teachers

Teachers' Roles in Effective Teaching	f
Using different teaching methods, techniques, and materials	8
Becoming a guide	7
Making the student active	6
Paying attention to individual differences	5

Knowing the structure of society	
Preparing an effective teaching plan	2
Knowing the ways students learn and acting in accordance with program requirements	
Criticizing and questioning	
Following technological developments	
Processing the course according to student level	
Having empathy	
Respecting students' thoughts	1
Being a leader	
Having effective communication skills	
Being planned	
Being open to learning	
Having knowledge of the field, professional knowledge skills, and general culture	

When asked about teachers' roles in effective teaching, the use of different teaching methods, techniques, and materials was the most frequently listed role (f = 8). Being a guide was the second most popular answer (f = 7). For example, the 10th pre-service teacher emphasized that *"the teacher should make the students aware of what is important for group and individual success by working collaboratively with his or her students."* Following this role, making the student active (f = 6) and giving importance to individual differences (f = 5) were listed. When Table 2 is closely examined, roles such as preparing an effective teaching plan, following technological developments, communicating effectively, and establishing empathy were among the least expressed ones. Additionally, common personality traits of teachers for effective teaching, such as being creative, energetic, organized, social, and patient (Ornstein & Lasley II., 2004) and having a high level of self-efficacy (Bright, 2011), were not mentioned in any of the responses by pre-service teachers in this current study. However, it was still recognized that most of the roles that pre-service teachers describe as effective teacher roles are supported in the literature. For example, among the roles required to be an effective teacher, planning and presentation skills, organizing the classroom environment, and teaching techniques are among the most emphasized (Moore, 2014; Ornstein & Lasley II., 2004). Planning and presentation skills include field knowledge and pedagogy, knowledge of how students learn, setting appropriate goals, knowing ways to reach necessary resources, and using reliable and effective assessment methods. Skills for organizing the classroom environment include considering the individual needs of students, encouraging students, caring about students' efforts, trying to improve the quality of teacher-student and student-student relations, using the classroom space effectively, helping students with their personal and educational problems, and managing the classroom effectively. Skills related to teaching techniques include actively involving students in the learning process, providing information about the learning process, using different types of questions, having strong oral and written communication skills, and organizing lessons according to feedback. Additionally, Ko, Sammons, and Bakkum (2014) listed the roles of effective teachers, including informing students regarding the instructional objectives and their responsibilities, implementing their instructions starting from students' prior knowledge and based on students' needs, providing feedback, and teaching metacognitive strategies for students to use. Responses according to pre-service teachers regarding the roles of students' roles in effective teaching are provided in Table 3.

Table 3. Students' roles in effective teaching according to pre-service teachers

Students' Roles in Effective Teaching	f
Participating actively in the course	6
Being responsible	3
Criticizing and questioning	2
Transferring information to real-life	
Following technological developments	
Having empathy	
Researching	
Being willing to learn	
Discovering information	1
Having the ability to work in a group	
Obeying classroom rules	
Constructing knowledge	

When asked about the roles of students in effective teaching, the most popular role was the active participation of students (f = 6). Then, the roles of being responsible (f = 3), criticizing or questioning, and implementing information (f = 2) were mentioned. In terms of being responsible for their own learning, the 17th pre-service teacher stated, *"The student should make preparations to reach the information."* Roles such as following

technological developments and having empathy were stated the least, like the effective teacher roles previously listed. In addition to these roles being stated, researching, being willing to learn, exploring knowledge, working in a group, following classroom rules, and constructing knowledge were also among the least listed roles. In effective learning, students have duties and responsibilities as well as teachers do. Among the roles they have to fulfill are to produce problems or tasks to work on, work on solutions to problems, establish relationships between previous learning and new learning, be aware of their own learning process, associate what they have learned with their own lives, evaluate themselves and their peers, think critically, and have the ability to question (Bıyıklı, Veznedaroğlu, Öztepe & Onur, 2008). In this study, it was recognized that pre-service teachers expressed fundamental roles such as criticizing, questioning, and putting knowledge into practice.

The answers provided regarding the second research question, *"What did pre-service teachers take into consideration in choosing teaching methods?"* are provided in Table 4.

Table 4. Pre-service teachers' considerations when choosing teaching methods

Considerations When Choosing Teaching Methods	f
Feature of the subject	8
Students' level of readiness	7
Number of students	5
Objectives	4
Teacher's knowledge of using methods	2
The school's infrastructure and the materials	1
Time	1
Cost	1
Whether it attracts students' attention	1

As seen in Table 4, pre-service teachers' comments were organized into nine categories, starting from the most frequent to the least frequent: (1) feature of the subject to be taught (f = 8); (2) students' level of readiness for the subject (f = 7); (3) number of students in the class (f = 5); (4) achievements targeted (f = 4); (5) teacher's knowledge of using methods (f = 2); (6) the school's infrastructure and the materials it provides (f = 1); (7) time (f = 1); (8) cost (f = 1), and (9) attracts students' attention (f = 1). When deciding on teaching strategies and methods to be utilized in teaching, Gözütok (2017) and Aydın (2022) recommend considering the objectives of a lesson, student readiness, learning styles, duration of the lesson, and the number of students. According to these recommendations, it was determined by the researchers that the factors pre-service teachers in this study considered when choosing their teaching methods were compatible. However, it was found that the pre-service teachers did not take into consideration factors such as the infrastructure of the school and the materials provided, as well as time, costs, and how interesting the method was.

Within the scope of the third research question, *"What were the methods and techniques used by pre-service teachers when teaching courses?"* the pre-service teachers were first asked to list the approaches, methods, and techniques they knew and explain which ones they preferred to use while preparing their lesson plan and/or activities. The methods and techniques listed by the pre-service teachers are provided in Table 5.

Table 5. Teaching methods and techniques listed by pre-service teachers

Listed Methods and Techniques	f
Question-answer	9
Drama	
Lecture	8
5E learning cycle	
Six thinking hats technique	7
Station	6
Brainstorming	5
Demonstration	4
Discussion	
Case study	
Talking circle	2
Developing opinions	
Role playing	

Working in groups	1
Educational games	

As seen in Table 5, the most frequently listed methods were question-answer and drama (f = 9), while the least listed methods were working in groups and educational games (f = 1). In addition to listing the methods they knew, the pre-service teachers were asked to indicate which methods they preferred to use in their lesson plans. The methods preferred to be used in lesson plans by the pre-service teachers are provided in Table 6.

Table 6. Preferred teaching methods and techniques in pre-service teachers' lesson plans

Preferred Methods and Techniques	f
5E learning cycle	12
Question-answer	6
Station	5
Drama	
Lecture	4
Discussion	3
Six thinking hats technique	2
Case study	
Demonstration	1
Brainstorming	
Role playing	
Working in groups	

It can be gleaned from the information listed in Table 6 that the teaching method most preferred by pre-service teachers was the 5E learning cycle model (f = 12), while demonstration, brainstorming, role playing, and group work (f = 1) were the least preferred teaching methods and techniques. Although question-answer and drama methods were the most frequently listed methods, when the teaching methods utilized in the lesson plans were investigated, it was recognized that they were mentioned less than the 5E learning cycle model and ranked second and third in the number of listed teaching methods and techniques. While the six thinking hat techniques and lecture methods were listed at the top, they were among the methods not as preferred in lesson planning. Similarly, while brainstorming was mentioned five times and demonstration technique was listed four times as teaching methods and techniques known by pre-service teachers prior to lesson planning, they were used only once in the preparation of lesson plans. Although the talking circle, developing opinions, and educational games were listed by pre-service teachers as known teaching methods and techniques, they were not included in any lesson plans. When the methods pre-service teachers' used in lesson plans were analyzed, it was observed that pre-service teachers mainly used methods that created a dynamic where the students were active, such as the 5E learning cycle model, question-answer, station, and drama. Importantly, the 5E learning cycle model, question-answer, station, and drama, which were frequently preferred by pre-service teachers, are also widely recommended by educators because they develop students' analytical and critical thinking skills, communication, and higher-level thinking skills, as well as aid students in putting events and thoughts into logical order, enable students to actively participate in the lesson, promote students to work with others, lead to increases in students' creativity and motivation, and promote students to be more social (Aydın, 2022; Dirik, 2014; Gözütok, 2017; Güven, 2011). In addition, a teacher who aims to teach through discovery by the students within the learning process is expected to give priority to group work, discussion methods, and project work (Gözütok, 2017). However, only three of the pre-service teachers used the discussion method, and one pre-service teacher utilized group work, while no pre-service teachers included project work in their lesson plans.

However, Koç (2015) posits that teachers should use different methods and techniques to meet the differing needs of students. In Akgün, Hamutoğlu, and Yıldız's (2015) study, it is seen that most teachers use the lecture method, while case studies, demonstration, problem solving, and discussion methods are followed in subsequent order. In the same study, the technique most frequently used by teachers is the question-answer technique. Other techniques that follow the question-answer technique are brainstorming, role-playing, drama, and educational games. Additionally, in Karasu Avcı and Ketenoğlu Kayabaşı's (2019) research with primary school teachers, it was seen that classroom teachers frequently use direct instruction, question-answer, drama, and discussion methods in Turkish; direct instruction, question-answer, and problem-solving methods in mathematics; direct instruction, question-answer, and role-playing in life studies; lecture, question-answer, and drama in social studies courses. Primary school teachers stated that they used experiments, question-answering, and lecture methods in science and technology courses. On the other hand, in the research conducted by Şahin and Ulucan (2023), it was determined

that the methods and techniques most used by primary school teachers were drama, brainstorming, discussion, problem solving, role playing, case study, and station methods.

It is seen that pre-service teachers need more support in effectively utilizing teaching methods and techniques. For example, in Demircioğlu, Genç, and Demircioğlu's study (2015) with university seniors enrolled in a Social Studies Teaching Program, the pre-service teachers do not have enough knowledge about teaching strategies, methods, and techniques. These findings are also emphasized in studies by Çelikkaya and Kuş (2009) as well as Akpınar, Çolak, and Yiğit (2012).

When the methods used in pre-service teachers' written lesson plans were examined, it was observed that methods that lead to students being active, such as the 5E learning cycle model, question-answer, station, and drama, were all heavily used. These methods, which were frequently used by pre-service teachers in this current study, are seen as a promising finding in other studies because they support the fundamental skills of students such as socializing, being creative, working in a group, and establishing a cause-and-effect relationship (Aydın, 2022; Dirik, 2014; Gözütok, 2017; Güven, 2011). However, it was observed that project-based learning, which is one of the methods that enables a student to discover and learn, was not included in any lesson plans in the current study. One reason for this may be that it takes a lot of preparation and a long time in the classroom to conduct a course using this approach.

In this current study, the pre-service teachers were also asked to explain the rationale behind the methods and techniques they chose. The reasons for pre-service teachers are provided in Table 7.

Table 7. Reasons why pre-service teachers prefer teaching methods and techniques used in lesson plans

Reasons for Choosing Methods and Techniques	f
Providing effective teaching	7
Making the student active	
Increasing the ability to work in a group	4
Ensuring teacher-student/student-student interaction	3
Ensuring learning through hands-on activities	
Considering individual differences	2
Allowing students to express themselves	
Letting students discover information	
Making students motivated	
Keeping the student's attention alive	
Improving creativity	
Developing awareness of respect for different ideas in students	1
Letting students take responsibility	
Associating learning with daily life	
Seeing the strengths and weaknesses of the student	
Trying to make the student question, research, and be self-confident	

When the information presented in Table 7 is reviewed, the most important factors affecting the choice of methods by pre-service teachers were providing effective teaching and making the student active (f = 7).
However, important factors such as motivating students, developing creativity, developing awareness of respect for different ideas in students, giving responsibility to students, associating learning with daily life, seeing the student's strengths and weaknesses, and ensuring that the student is questioning, researching, and self-confident were mentioned only once. Although these opinions from the pre-service teachers were related to the features of effective teaching stated above, these features were not sufficiently emphasized.

In the third research question, focus was placed on which methods and techniques were used in the classroom by the pre-service teachers while they were teaching their planned lessons. Researchers analyzed whether the methods and techniques used by participants changed according to the subject they were teaching. According to the observations, pre-service teachers most often prepared and taught Turkish lesson plans (f = 8). Secondly, it was observed that the preferred course was life studies (f = 4), and the following subjects were social studies (f = 3), science (f = 2), and mathematics (f = 1). According to the analysis of the instructional videos watched by the two researchers, pre-service teachers used seven methods and techniques in the 18 lessons that were taught. The most common of these were question-answer (44%), lecture (21%), and group work (19%). Individual study (5%), station technique (3%), drama (3.6%), and fishbone diagram (2.5%) were found to be used less frequently.

Additionally, when teaching methods in diverse subjects were analyzed, it was seen that pre-service teachers mainly used the question-and-answer method (50%) and direct instruction method (24%) in the Turkish language course; again, mainly the question-and-answer method (36%) and group study (32% in the life studies course); question-and-answer method (30%) and direct instruction method (20%) in the social studies course; question-and-answer method (45%) and direct instruction method (22% in the science course); and question-and-answer method (82% and direct instruction method (18%) in the math course. A similar finding was found in Erdem and Bayraktar's (2019) study. Analyses of 26 pre-service teachers' lesson plans showed that pre-service teachers used mostly the question-and-answer technique. The lecture method followed it as the second most commonly used method. In another study, Yıldırım and Demir (2003) examine the methods used by teachers in science lesson instruction and state that the most frequently used method is lecture. The question-answer method frequently used by pre-service teachers is also listed among the methods used by teachers. It is also recognized that teachers do not use teaching methods and techniques such as discussion, drama, case study, and brainstorming frequently enough. Similarly, in studies by Özer (2013) and Köse (2011), it is observed that pre-service teachers prefer to use the methods of lecture and question-answer, while in other studies conducted with Social Studies pre-service teachers, it is determined that pre-service teachers adhere to traditional methods (Akpınar, Çolak & Yiğit, 2012; Çelikkaya & Bird, 2009). Additionally, in another study (Demirhan İşcan & Keleşoğlu, 2017), it is seen that even though pre-service teachers prefer using the 5E learning cycle method when teaching life studies and social studies, they mainly focus on the explanation stage, in which they use the lecture method frequently. Similar circumstances are also found in Arıkan's (2009) study with pre-service technology teachers.

A review of all the observed lessons revealed that the question-answer method was the most popular teaching method in all the recorded lessons. A similar finding is observed in Bilen's (2014) study, where it is emphasized that pre-service teachers in a primary mathematics department most often use the question-answer method while teaching their courses. In another study, Akgün, Hamutoğlu, and Yıldız (2015) also emphasized that the question-answer method is the teaching technique most frequently used by early childhood, mathematics, Turkish, and Social Studies teachers.

In order to answer the fourth question of the research, *"Were the methods and techniques pre-service teachers used during the internship appropriate to the teaching principles (i.e., purposefulness, being relative to students, making students active, and being concrete)?"* the lesson plans prepared by pre-service teachers were examined. In accordance with the purposefulness principle, the methods and materials used were expected to be motivating for students to achieve the targeted achievement. For the instruction to be relevant to students, this principle means that the selected topics and methods used in teaching are appropriate for the level, interests, and needs of the students. The principle of activity is that students in the class take an active role in the learning process, and instruction is not solely teacher-centered, while the principle of concreteness is that students start from concrete experiences and move towards abstract ideas (Aykaç, 2009; Dirik, 2014).

When the overall courses were considered, it was observed that pre-service teachers most often prepared and presented their lessons in accordance with the teaching principles listed above in all the observed courses, except for mathematics. In the Turkish lessons that were observed over eight lesson hours, only two observations were not considered to comply with these principles. In one of these instances, one pre-service teacher used words that were above the students' level when teaching synonyms and antonyms (*e.g., sample, anxiety)*. In another example, although students said that there were many unknown words in the text, the pre-service teacher explained only two of the mentioned words *(geologist and ballet dancer)*. For this reason, it was determined that the applications made in those two examples contradicted the teaching principle of being relative to the students.

In the Life Studies course, which was observed over four separate hours, it was determined by the researchers that only once was the pre-service teacher's lecture not compliant with the principle of being relative to the students. In this example, the 2nd grade students could not understand the instruction provided by the pre-service teacher and, as a result, did not successfully complete the assigned activity *(classification of professions from past to present)*.

When observations were made regarding the Social Studies instruction that took place over three lesson hours, an example that did not conform with appropriate teaching principles was found. In this example, the principle of concreteness was ignored in questions asked by the pre-service teacher regarding *National Sovereignty* and the *Parliament* because they were above the students' level. As a result, questions regarding this topic remained abstract to the students.

An example that did not comply with the teaching being relative to students was observed in one course hour of science instruction. In this example, students were not able to answer questions such as, *"How many times does the Earth rotate on its axis when it completes a full orbit around the Sun?"* and *"What are the consequences of the Earth's curvature?"* These questions were found to be above the students' level.

In the mathematics course, which was observed once, the principles of being in line with the purpose of instruction and making students active during the lesson were met. However, during this lesson, it was also recognized that the principle of the instruction being relative to students as well as its concreteness were not met. For example, it was observed that decimal fractions were only explained on the number line, and following the description, the pre-service teacher asked questions, but no concrete hands-on materials were used. As seen in the examples provided above, the pre-service teachers were not successful in providing students with instruction that met the principles of being relative to students and concreteness while preparing and applying their lesson plans.

Conclusion

In this current study, the researchers examined the teaching methods and techniques utilized by pre-service teachers during their practicum teaching lessons as part of their Teaching Practicum II course. Also investigated were how the pre-service teachers defined effective teaching, what they considered in the selection of their teaching methods, as well as the suitability of the chosen methods and techniques with previously established teaching principles.

When defining effective teaching, the pre-service teachers most often emphasized the choice of different methods and following a student-centered approach. However, some factors that the pre-service teachers rarely included but were important for choosing effective teaching methods included motivating students, developing creativity, respecting differing ideas, taking responsibility for learning, connecting learning experiences with daily life, ensuring that students recognized their own strengths and weaknesses, as well as ensuring that the students were inquisitive.

When the participants were queried regarding the roles of an effective teacher, the most frequently stated response was that the teacher needs to utilize differing teaching methods, techniques, and materials. The pre-service teachers also emphasized that for the effective roles of teachers, a teacher should be the guide, make the student effective, and give importance to individual differences. Less frequently, the pre-service teachers expressed that the roles of an effective teacher were preparing effective teaching plans, following technological developments, communicating effectively, and establishing empathy.

The pre-service teachers stated that in effective learning, students also have roles, such as actively participating in the lesson and taking responsibility for learning, thinking critically, and transferring what they learn to new situations. While pre-service teachers did not emphasize following technological developments and empathy when commenting on the roles of students, they also provided little consideration to research, willingness to learn, discovering information, working in a group, following classroom rules, and structuring knowledge. Additionally, it was determined that pre-service teachers mentioned most of the required roles of students for effective teaching and learning but did not express the role of students in effective teaching, such as the students' being aware of their own learning process, producing problems or tasks to be studied, as well as evaluating themselves and/or their peers.

When pre-service teachers were asked to explain what they considered when choosing teaching methods, they stated that they considered the subject to be taught, the students' readiness level, the number of students in the class, targeted gains, the teacher's knowledge regarding the method, school infrastructure and available materials, time and cost, as well as gaining the students' attention. It was seen that the pre-service teachers who participated in the study expressed all these recommended principles. In addition, the participants also emphasized that they considered whether the teaching methods they chose would grab the attention of their students.

Among the approaches, methods, and techniques the pre-service teachers had knowledge of were question-answering, drama, group work, educational games, lectures, the 5E learning model, six thinking hats, stations, brainstorming, demonstration, discussion, case study, taking circles, developing opinions, and role play. Among these teaching methods and techniques, the most frequently listed methods were question-answering and drama, while the least frequently listed methods were group work and educational play. When it came to the knowledge

of teaching methods and techniques, it was promising to see that pre-service teachers in this current study could list as well as use a variety of effective teaching methods and techniques.

Pre-service teachers were also asked to explain the motivation and reasons behind choosing the methods and techniques they used in their lesson plans. Pre-service teachers most often stated that the reasons behind their choices were to ensure effective teaching as well as to get the students to be more actively involved in the instruction. However, some other important reasons, such as motivating students, developing creativity, respecting different ideas, taking responsibility for learning, associating learning with daily life, ensuring that the student sees his strengths and weaknesses, and ensuring that the student is inquiring, investigating, and self-confident, were rarely mentioned for determining which teaching methods and techniques to use.

The results discussed so far have been obtained by examining the answers of pre-service teachers to the information form and the lesson plans they prepared. The results discussed in the following paragraphs were obtained by observing the pre-service teachers' lessons and field notes.

According to the results of the analysis of the videos from pre-service teachers practicum lessons that were recorded and reviewed and field notes taken by the researchers, it was recognized that the pre-service teachers in this current study utilized seven different teaching methods and techniques within a total of 18 lessons. From the most frequently used to the least frequently used, the methods and techniques utilized in teaching practicum lessons were question-answer, lecture and group work, individual work, station, drama, and fishbone diagram.

In this study, other than in mathematics instruction, it was observed in all the other subjects that pre-service teachers prepared and presented their lessons in accordance with these teaching principles: a) purposefulness, b) being relative to the student, c) keeping students active, and d) being concrete. One of the reasons for this finding may be that only a single observation was made of a mathematics lesson. Another reason could be that only two methods were chosen by the pre-service teacher for the mathematics lesson, and concrete examples and materials about decimal fractions that the students were unable to understand were utilized in the lesson.

Recommendations

Suggestions for both practitioners and researchers are given in the following paragraphs. Pre-service teachers should be generous in providing feedback to learners while they are teaching their lessons. For example, words that students do not know should be defined throughout the activities; instructions provided to students should be clear and repeated; when necessary, the time allotted for individual or group tasks should be explained; and when abstract concepts are part of the instruction, they should be supported with supplemental materials.

Courses should be taught with a student-centered approach using different methods and techniques, and teaching should be supported with visual elements. While theoretical lessons are dominant in teacher education programs, the proportion of lessons that provide the opportunity for practicum remains insufficient. Therefore, courses requiring practicum teaching should be included in teacher education programs from the first year of study.

In addition, as highlighted in the related literature, pre-service teachers should be supported in using the theoretical knowledge they have learned in their courses, such as (1) teaching principles and methods, (2) special teaching methods during the undergraduate education process, and (3) extending the period of teaching time within the scope of teaching practicum courses. Opportunities should be provided to pre-service teachers to apply the knowledge and skills they have learned during their undergraduate education. Furthermore, by extending the implementation period of the pre-service teaching practicum courses, the pre-service teachers can gain better knowledge, experience, and confidence in using the teaching methods and theories that will aid in improving their future students' learning and success. Another recommendation is that a similar study can be carried out with experienced teachers who have been teaching for 10 or more years. In doing so, the teaching methods and techniques preferred and utilized most by experienced teachers can be investigated.

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Since the study's data were collected before 2020, there was no Ethical Approval Form.

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Teacher Education Lecturers' Views of Open Educational Resources: A Case of South African Universities

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Abstract
Literature reflects that universities freely share their teaching materials as Open Educational Resources (OER). The primary objective of this study was to investigate the views of lecturers at faculties of education on the usefulness of OER for academic purposes at selected South African universities. This study is grounded in the Technology Acceptance Model, TAM (Davis, 1989), the Unified Theory of Technology Acceptance and Use, UTTAU (Bagozzi, 2007) and the Theory of Diffusion of Innovations, TDI (Rogers, 2003). These theories justified this investigation and explored the views of lecturers at faculties of education on the usefulness of OER for academic purposes at selected South African universities. The qualitative research approach informed the study, which employed semi-structured interviews. Four lecturers were sampled purposively from each university to participate in the research, and the data were analysed thematically. The findings of this study are that although the lecturers had an inadequate understanding and knowledge of OER, they displayed their disposition toward the usefulness of OER in applying to their pedagogical practices. What is now needed is for South African universities to ensure greater OER awareness and assist lecturers in acquiring knowledge of OER so that they can infuse and utilise it effectively in their daily teaching and learning environments.

Keywords: Open educational resources, Conceptualisation, Lecturers, Universities

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Introduction

A large and growing body of literature has investigated the usefulness of open educational resources (OER) that allow for collaboration, sharing, repurposing, and accessing (Plotkin, 2010). According to Mishra (2017), OER is teaching and learning resources such as course materials and textbooks, which are available on the net at no cost. Lecturers worldwide share their course materials and textbooks on public networks and assist each other in improving their teaching and learning.

The fast and exponential development of Information Communication and Technology (ICT) recently resulted in new innovative pedagogical practices, particularly at universities. Nowadays, teaching and learning at universities are characterised by ICT devices such as computers, laptops, and iPads, which require considerable technical skill from lecturers and students. Besides technical competence, lecturers must master situated-knowledge practices to interact and apply digital tools so that they and their students can access teaching-and-learning materials via ICT-based situated-knowledge practices (Brown, 2012).

Even though many South African universities have the technological infrastructure and have invested in OER, lecturers know little about their effect on teaching and learning. Several South African studies on OER integration into teaching and learning (Cox & Trotter, 2017; de Hart, Chetty & Archer, 2015; Lesko, 2013; Madiba, 2018) find that South African lecturers need to be appropriately introduced to OER. However, studies reported that lecturers were reluctant to explore OER as an innovative pedagogical resource because their universities do not subscribe to the OER movement (Madiba, 2018; Hodgkinson-Williams et al., 2017; Bello et al., 2021). Furthermore, a South African study reported that lecturers are aware of OER, but factors such as advocacy and adoption are influenced by the university tuition policy (Cox & Trotter, 2017). Based on these studies, the main objective of this study was to investigate lecturers at faculties of education views of the usefulness of OER for academic purposes at selected South African universities. The following questions were formulated to obtain results and achieve the study's primary objective.

- What are lecturers' understanding of OER regarding teaching and learning at faculties of education?
- What are lecturers' experiences of OER in their teaching and learning at faculties of education?
- What OER materials are used as artefacts by lecturers in teaching and learning at faculties of education?

Literature Review

This study is grounded in the Technology Acceptance Model, TAM (Davis, 1989), the Unified Theory of Technology Acceptance and Use, UTTAU (Bagozzi, 2007) and the Theory of Diffusion of Innovations, TDI (Rogers, 2003). These theories justified this investigation and explored the views of lecturers at faculties of education on the usefulness of OER for academic purposes at selected South African universities. Firstly, the contribution of TAM is the uniqueness of attitudes and intentions that complement behaviour. In this study, why do some academics use OER to enhance lectures? TAM is important because it examines attitudes towards behaviour and subjective norms to be carried out (Bobbitt & Dabholkar, 2001; Binyamin, 2019). Fishbein and Ajzen (1980) suggest that individuals are logical, make organised use of an information system, and consider its consequences. This theory consists of two segments that determine people's behaviour. The first is the behaviour attitude, and the second is the subjective norm. As to the latter, Ajzen and Fishbein (1980) suggest that a connection between notable attitudes and beliefs towards behaviour is vital to ensure "correspondence in action, target, context, and time elements". In this study, the TRA model assisted in identifying links between the attitudes and beliefs of lecturers regarding using OERs in teaching and learning. Concerning the TAM model, Davis (1989) explains that individuals' actions are based on evidence from circumstances, beliefs, and attitudes. This model attempts to describe how users embrace and use new technologies. In addition, scholars argue that lecturers' reflections on the usefulness of OER might be affected by how students perceived the easiness and usefulness of resources (Davis, 1985; Kim et al., 2015). Bagozzi (2007), on the other hand, denounces the weak conceptual connections between the TAM constructs, which we concur with, and includes the TRA and the UTUAT models. Moreover, Bagozzi (2007) emphasises the importance of cultural and group features in technology acceptance by matching collaborative decisions on technology acceptance and actual use with people or group requirements. Davis's (1985) and Bagozzi's (2007) theories are relevant to this study as they underline the human intention to perform a behaviour. Finally, the Theory of Diffusion and Innovations (Rogers, 2003) claims that diffusion is how an individual decides to adopt any innovations, such as integrating ICT, Open text, OER, and Web 2.0 technology-integrated platforms. This is evidence of an individual that showed acceptance or rejection of new ideas, in this case, investigating lecturers' views of whether OER suits student learning. In other words, the adoption and use of

OER and other electronic instructional media is the responsibility of individuals, in our case, lecturers at faculties of education located in institutions of higher learning.

A global movement for free and open access towards OER

The OER movement as a global strategy, which is a reasonably new phenomenon, has gained academic credibility over the past two decades towards the diffusion for the adoption of OER (Piedra et al., 2014), and its potential to transform education worldwide has generated considerable interest in the concept of OER. Scholars across the world have proposed a range of OER definitions. Some definitions emphasise openness, whereas others view them as resources with intellectual property licenses.

The OER movement began in 2001 with the Open Course Ware (OCW) initiative at the Massachusetts Institute of Technology (MIT) (Torres, 2013). It entailed that Internet courses for students and faculty members were posted free of charge (Kanwar et al., 2010). Torres (2013) claims that since then, the terms "OCW" and "OER" have become widespread and common and have earned global recognition. Similarly, Ferrari and Traina (2013) define OER as educational resources designed for teaching and learning that demand neither royalties nor license fees. Studies reported that OER is quality-assured course materials, ebooks, open text, curriculum maps, streaming videos, podcasts, multimedia applications, and other related resources that educators and their students use without paying royalties or license fees (UNESCO, 2002; Butcher et al., 2011; Creative Commons, 2012; MacIntosh et al., 2011). In addition, Tuomi (2012) describes OER *"…as a public good and large bodies of economic literature become relevant in explaining why and when policy intervention is justified for such goods."* (p. 5). Adding support for free and open access towards OER, Plotkin (2010) argues that the best option is licensing all resources as intellectual property to increase the global footprint of the movement. To advance the global OER movement agenda, licensing should be available for "re-use, re-working, re-mix, and redistribution" (Plotkin, 2010). Kanwar, Balasubramanian and Umar (2011) take the definition a step further by adding OER's practice and cultural aspects and including an empowerment process. The conceptual view of OER emphasises the interaction and collaboration of all stakeholders in implementing and adopting OER since they play significant roles in its infusion in teaching and learning. After all, OER pertains to globally generating knowledge of all stakeholders (Ossiannilsson & Auvinen, 2012; Kanwar et al., 2011; UNESCO-COL, 2011).

The vagueness of the " open " concept has been an advantage to the OER movement. It is frequently misunderstood as "free of charge" (Johnson et al., 2014, p.14). The concept "open", as defined by Jhangiani and Biswas-Diener (2017), means "allowing access to". Many countries take advantage of the concept to share knowledge. It has led to several new teaching approaches, and the education domain is steadily accepting this open movement's presence, growth, and influence (Olcott, 2013). The open movement is about sharing resources in support of student learning (Kelly, 2014).

The open movement depends on collaborative environments of teaching and learning in which users share resources to enhance knowledge creation. UNESCO (2012) advocates sharing resources with no or limited restrictions. The sharing of resources must be built on the practical digital competencies of users who embrace the new approach to teaching and learning. Tosato, Arranz, and Avi (2014) deem that sharing resources will eventually culminate in inequitable access. Furthermore, Mishra (2017) explains the OER movement in-depth and defines the phenomenon as the practice of sharing resources to enhance pedagogy through innovation. OER implies that open web repositories allow for the sharing, mixing, and re-using of existing OER as a public good. This study aligns with Hodgkinson-Williams, Arinto, Cartmill, and King's (2017) view of the OER definition concerning the "use of OER". In addition, Wiley (2015) maintains that the 5R strategy (retain, reuse, revise, remix, and redistribute) enables lecturers to plan the use of OER for their daily practice. According to Wiley and Hilton III (2018), the 5R strategy means that OER-enabled pedagogy is not defined by copyright but by the relationship between them and teaching and learning practices. Williams and Werth (2021) concur that this type of pedagogy enables users through Creative Commons licensing to direct how others use their work. The OER-enabled pedagogy has activities that empower teaching and learning and encourage life-long learning through problem-based learning (PBL). In PBL, "Students use their previous knowledge, discuss, interact, seek new knowledge and integrate their results with a group, with the help of a tutor" (Brown et al., 2020, p.1).

Based on the above argument, all traditional teaching and learning approaches need an overhaul because students should be at the centre of knowledge creation.

Method

This paper emerged from the original doctoral study completed in 2021. Prior to commencing this study, ethical clearance (Reference #2019/06/12/55362443/22/MC) was granted before the doctoral study. It was decided that

the best method for the exploratory qualitative approach adopted for this investigation was to interrogate lecturers at faculties of education regarding the usefulness of OER for academic purposes at selected South African universities. Participants were recruited from three South African universities. The three universities were purposively sampled based on the availability of computer-based teaching and learning tools on their campuses. We sampled six (n=6) lecturers who agreed and permitted participation in the study. For this paper, semi-structured interviews were conducted online via Microsoft Teams videoconferencing interviews with six (n=6) purposively sampled lecturers selected for each of the three universities. The six lecturers drawn as participants from the three universities were purposively sampled based on their experience of participating in teacher education using OERs. In the qualitative data collection phase, the researchers e-mailed a letter of consent to all participants. In it, they were informed of the study's goals, procedures, pros and cons, and the duration of their involvement. Their informed consent guaranteed their right to self-determination and ensured they took responsibility for any event during the research process (Seherrie, 2017). Participants had to sign the consent form to indicate their willingness to participate in the study. Participants were informed that they could withdraw from the study if they felt uncomfortable during the study. The research committees of each university granted permission to conduct the research at their respective universities. Data were transcribed to augment the interview recordings and analysed thematically. The following steps were implemented:

- Multiple reading of transcripts, listening to recordings, and noting the text of each participant
- Searching for relationships and connections across clustered themes
- Identifying patterns across themes
- During the data analysis process, frequent concepts and words in all extracts were underlined or highlighted with a specific colour for easy categorisation under each dimension.
- Codes were used to identify each categorised dimension for each theme. Only related or aligned extracts under each of the questions were extracted.
- The final process, codes and extracted data were placed under each theme and subtheme generated. (Braun & Clarke, 2012; Nowell et al., 2017; Creswell & Poth, 2018).

Before the data could claimed as trustworthy, credibility was ensured in the following manner. The transcriptions of data sets for each Microsoft Teams videoconferencing recording were emailed to participants to verify whether the transcriptions and recordings were a true reflection of the interviews. This allowed participants to ensure and confirm the correctness of the data set. However, if the participants found discrepancies in the extracts, it was highlighted by the participants and corrected by the author. Finally, data sets were signed by participants as a true reflection of the interviews.

Ethics approval notification

Ethical permission (Reference #2019/06/12/55362443/22/MC) was obtained from the College of Education, University of South Africa, an institution for this research. The research paper is produced from a thesis available *on https://uir.unisa.ac.za/bitstream/handle/10500/28967/thesis_setshedi_jr.pdf?sequence=1&isAllowed=y*

Findings

Only related or aligned extracts under each question were extracted and placed under each theme, and a subtheme was generated as depicted as findings.

Theme 1: Conceptualisation

The fact that participants identified and reported on their conceptualisation is a prominent theme in the data. In this theme, the researcher recognised and reported on the participating lecturers' conceptualisation of using OER. The theme describes their awareness of the OER concept. According to them, OER is any material that can be freely accessed online. Participants indicated their awareness of the OER concept. Most of them conceptualised OER based on their understanding of it. Participants also explained the benefits they derive from the use of OER. Two sub-themes emerging from this theme are globalisation and access to educational materials.

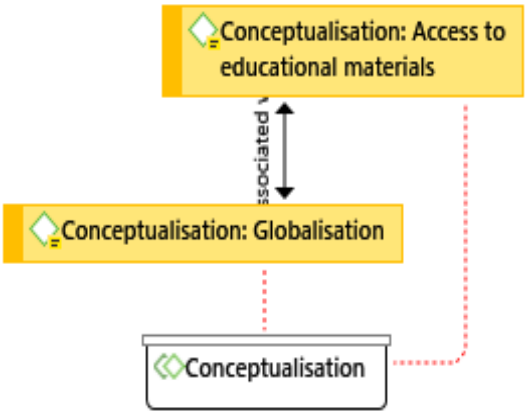

Figure 1.1 Theme 1 and its sub-themes

Sub-theme 1.1: Conceptualisation of globalisation

The lecturers interviewed in this study believed that OER prepares them for the Fourth Industrial Revolution and promotes equal access to education. This code refers to the conceptualisation of OER from the participant's perspective. Participants indicated that OER promotes the globalisation, development, and advancement of knowledge within various disciplines. Most interviewed participants had some idea of the term and could conceptualise OER in their own words. Four participants, namely Lecturer E, Lecturer O, Lecturer R, and Lecturer S, could not conceptualise OER. This code included the advancement of technological tools in line with the Fourth Industrial Revolution. Besides being regarded as open access to knowledge, OER is about developing and advancing knowledge systems and presenting local expertise to international platforms. Two participants said the following:

> Lecturer L: OERs are educational materials made open and accessible to anyone. We need the information to be easily accessible. It is based on recognising that the world is riddled with massive socioeconomic inequalities. If that is the scenario, the United Nations is driving the agenda as the global body. The resources must be made available to the poorest of the poor.
>
> Lecturer T**:** My understanding is comprehensive. It tells me of globalisation and participation in the construction of knowledge and digital development. It only becomes an open educational resource because it works with digital, where we access the document via the internet. It helps to access all sorts of information from all over the world.

Sub-theme 1.2: Conceptualisation of access to OER as educational materials

Participants believed that OER includes educational material. They all attached value to free access to educational materials on the internet. Access to educational materials was critical in defining and conceptualising OER. Participants also related OER to access to e-materials. They acknowledged that the Internet enables access to materials and enhances flexibility by transcending any physical constraints:

> Lecturer T: OER is good because anyone who wants to reach the source can easily get it.
>
> Lecturer Q: It is a good platform, especially now that we are discussing the Fourth Industrial Revolution.

Participants' conceptualisation of OER must continue to its application in their teaching and learning. Some participants conceptualised OER as cost. The cost of educational materials was essential in conceptualising this phenomenon in the comments of the participants:

> Lecturer C**:** It is about resources you can use from the internet. You do not pay for them. You are supposed to get or request permission. I can put them in the study guide.
>
> Lecturer H**:** It should be freely available to students and for free. Of course, for the lecturers, it is to be published as part of our work.

Some participants emphasised the licensing of OER in their conceptualisation of OER. They conceptualised OER in the following way:

Lecturer G**:** OER refers to materials that should be open, accessible, re-used, and repurposed to whatever context. My wish is that the issue of licensing must be communicated openly and it should be relaxed. If I create a material, I need to acknowledge it.

Lecturer N**:** It is material regulated by the Creative Commons licensing and different categories could be freely used.

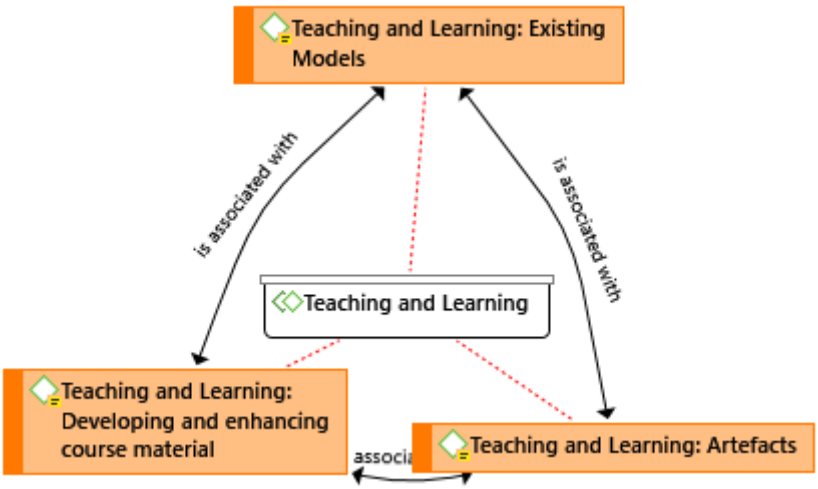

Figure 2.1 Theme 2 and its sub-themes

Sub-theme 2.1: Usage of OER artefacts in support of student learning

Lecturers mentioned that using OER artefacts to support student learning is considered vital to achieving lesson objectives. It includes e-books, videos and other multimedia material to enhance teaching and promote a student-centred approach to learning. Using OER promoted self-regulation and self-directedness in their studies. The participants designed some teaching artefacts while others were outsourced from OER platforms like YouTube. Some participants indicated that they use YouTube videos as part of their teaching:

> Lecturer P: OER is based on me giving students work. You will find them using it in the library. Sometimes, I use video.
>
> Lecturer R: We usually refer students to YouTube videos. We encourage them to use MyTutor for e-learning.

In developing countries such as South Africa, unawareness of OER is one of the hindrances to its use in teaching and learning. Participant (Lecturer I) indicated that they use videos, which are not OER. One of the participants put it this way:

> Lecturer I: I am using videos in my teaching.

Sub-theme 2.2: Developing and enhancing course material.

Participants mentioned that they developed and enhanced OER to support official study material for their courses. They appreciated the impact that OER has on the depth of the curriculum. Furthermore, they infused OER into their teaching by developing assessment plans and other forms of assessments. However, they expressed the need for other curriculums to add more relevant OER resources from a pedagogical perspective. It seems that OER also improves the learning experiences of students. Participants mentioned that integrating OER into their courses improved students' knowledge in specific areas of the syllabus. OER also boosted students' engagement with learning material and deep learning.

> Lecturer N: Well, on the module I am developing, 90% of the articles I am developing are OERs. I know OER, which could be the pedagogical shift as an enabler and game-changer globally.
>
> Lecturer H: My course development involves some material I took online. We use e-books and e-textbooks that I supplement by OER.

> Lecturer J: I am using OER in the Teaching Practice modules. We are developing materials; other materials have just been finalised for the upcoming programmes.

Sub-Theme 2.3: Teaching and learning: Existing models

Most participants reported being unaware of existing models for including OER in their teaching. There can be many reasons, such as inadequate advocacy for implementing OER, inadequate continuous professional development, academic training and insufficient awareness of OER platforms. The fact that participants could not isolate a specific model may mean they have a flexible approach to incorporating OER in their teaching. One lecturer commented as follows:

> Lecturer N: I do not know of any models. We do not have a policy that prescribes any model.
>
> Lecturer H: I am not sure about models and policies. The College of Education has put in place that all new programmes that are going to be offered should be approved by the College of Education Teaching and Learning Committee approval is required for all study materials you want to use. By so doing, they want to ensure that all materials are included in OER. I have not seen any OER policy. There is a guiding policy on OER.

One of the various OER policies, the *UNISA Open Educational Resource Strategy 2014 to 2016*, supports using OER in teaching and learning. The UNISA OER strategy views OER as an area of concern. It points out that the use of OER has to be incorporated into its mainstream institutional operations to exploit its potential in pedagogical transformation activities.

Discussion of findings

This study sought to investigate lecturers at educational institutions' awareness of and understanding of OER-enabled pedagogy. The first research question investigates lecturers' knowledge of OER regarding teaching and learning at faculties of education. It was found that participants were cognizant of and appreciated OER as educational material. The definitions provided by UNESCO (2012) and Madiba (2018) were adopted to provide an overview of OER-enabled pedagogy. The findings revealed that lecturers differed in their definitions and understanding of OER. Access to educational materials was critical in their definition and conceptualisation of OER. All six lecturers attempted to define the concept of OER. A huge dissimilarity in their clarification of the concept was evident. Altogether, 5 of the eight lecturers regarded OER as a resource that was easily accessible on the internet. Participant (Lecturer L) concurs that OER are educational materials made open and accessible to anyone. We need the information to be easily accessible. It is based on recognising that the world is riddled with massive socioeconomic inequalities. If that is the scenario, the United Nations is driving the agenda as the global body. The resources must be made available to the poorest of the poor. Findings showed that 2 of the 8 lecturers mentioned open licensing in their conceptualisation. Several scholars claim that the concept "open" means greater prominence must be given to sharing, re-using, and redistribution of OER amongst users to change the way OER is used as a global movement (Goodier, 2017; Kanwar et al., 2010; Madiba, 2018).

The second question explores lecturers' OER experiences in teaching and learning at faculties of education. It confirms lecturers' use of OER to introduce innovative ways of teaching and learning (Johnson et al., 2014; Jhangiani & Biswas-Diener, 2017). The spiral effect of participants' awareness of OER indicated that there could be a pedagogical shift in OER globally. Participant (Lecturer N) drives this point home: "Well, in the module I am developing, 90% of the articles I am developing are OERs. I know OER and could be the pedagogical shift as an enabler and game-changer globally." Lecturers remained aware of OER-enabler pedagogy in general and expressed positive views about this strategy to support their praxis and student learning. However, the findings revealed that 4 of the 8 lecturers had never used or been exposed to OER. Although lecturers were not empowered or trained in the practice or development of OER, lecturers were conversant with the concept. This is illustrated in the following remark: "It is about resources you can get from the internet and use, but you do not pay for them. You are supposed to get or request for permission. I can put them in the study guide. The lecturers' lack of awareness did not have a bearing on their views about the potential of the OER as an enabler of creating learning. Six of the eight lecturers were aware of the OER, revealing that awareness of OER at the three universities differs. Literature confirms that awareness levels differ at various higher-education institutions (Mishra, 2018). This is confirmed by Lecturer C, who commented that although he was not trained in OER, he is conversant with the concept: It is about resources you can get from the internet and use; you do not pay for them. You are supposed to get or request for permission. I can put them in the study guide.

The last question was asked about OER materials being used as artefacts by lecturers in teaching and learning at faculties of education. The findings revealed that lecturers use artefacts in their teaching and learning, as they mentioned using e-books and e-textbooks. This is illustrated by Lecturer H, who said that his course development involves some material I took from the internet. We use e-books and e-textbooks that I supplement by OER. Literature indicates that not all e-books, e-textbooks, or any free teaching and learning accessible on the net are OER materials. This further reveals that lecturers are not aware of what constitutes OER material. as. Therefore, lecturers lack knowledge of OER materials to assist them in integrating OER into teaching and learning, leading to the achievement of independent learning principles. Lecturers need to be capacitated to use OER in teaching and learning. Commonwealth of Learning (2011) contends that enhancing skills to adapt and contextualise existing OER to acknowledge students' diverse learning needs and support a range of learning approaches is one of the characteristics of the effective use of OER. One of the participants, on the staff of an open distance learning institution where OER is compulsory, indicated that they had initiated interventions. The results showed that only two of the eight lecturers received in-service training in OER and that self-regulation and self-directedness prompted them to gain awareness and knowledge of the OER concept by infusing e-books with other materials in the practices. So, provision is made for using OER in teaching and learning regarding continuous professional development, which the lecturer initiated and directed. Mishra (2014) confirms this by suggesting that OER-based online training can assist lecturers in accessing continuous professional development at universities that implement OER formally in their teaching and learning. The conceptual view of OER emphasises the interaction and collaboration of all stakeholders in implementing and adopting OER since they play significant roles in its infusion in teaching and learning. According to participants, OER encompasses open access, described as exposing local knowledge to global knowledge. These findings are consistent with that of Butcher and Moore (2015). After all, OER pertains to globally generating knowledge of all stakeholders (Ossiannilsson & Auvinen, 2012; Kanwar et al., 2011; Howell & Rodway-Dyer, 2010).

The above confirms the findings in the literature that lecturers' awareness of OER is influenced by numerous variables such as open access, cost, globalisation, and access to materials. However, there seemed to be no institutional influence on these variables. It also emerged that lecturers had different notions of what constitutes OER.

Conclusion

A large and growing body of literature exists on the usefulness of OER as an enhancer for student learning. However, the education sector needs to do more regarding the OER movement. This is evidenced by the findings that South African universities need to fill the considerable gaps in lecturers' conceptualisation of OER, which is critical to implementing OER-enabled teaching and learning at universities. In support of the findings, this study is grounded in the multifaceted theories that justified this investigation, which explores lecturers at faculties of education's views of the usefulness of OER for academic purposes at selected South African universities. Be that as it may, using OER in teaching and learning at South African universities faces several challenges. Whilst some lecturers viewed OER as educational material, most of them set great stores for free access to educational materials online. However, lecturers were aware of OER and displayed some understanding of the use of OER in teaching and learning, which did not translate into the benefits of OER and the 5Rs, which are retained, reused, revised, remixed, and redistributed. The study contributes to existing research by examining the lecturers at South African universities' conceptualisation of OER. Lecturers' understanding of OER and what they do with it in their teaching and learning activities are vital to reforming the education system. The findings of this study should contribute towards developing an OER distribution framework that would empower lecturers to implement OER in their daily teaching and learning effectively. The study examined participants' conceptualisation of the OERs. The findings reveal that although the lecturers were aware of OERs and their benefits, their understanding and knowledge of them were inadequate. In essence, lecturers have little or no understanding of the concept of OER. Neither do they have adequate knowledge to use OER in teaching and learning. They could not draw from the benefits of OERs, which, among others, include the 5Rs of Openness. Consequently, lecturers failed to infuse the potential of OERs in teaching and learning. It can be concluded that the lecturers cannot provide teaching and learning with additional resources for their students to augment their studies. Furthermore, lecturers may be reluctant to share knowledge with their peers because their knowledge of open licensing is inadequate. The study revealed that their inadequate understanding of OER affected its use in teaching and learning.

The sampling is limited because only twelve lecturers at three universities were sampled. The sample consisted of lecturers of faculties or colleges for teacher education.

What is now needed is for South African universities to ensure greater OER awareness and assist lecturers in acquiring knowledge of OER so that they can infuse and utilise it effectively in their daily teaching and learning environments.

Recommendations

The findings indicated that it is essential that the use of OER be included in teaching and learning practices. Based on the findings of the study on lecturers' use of OER in teaching and learning, the following recommendations (policy implications) are made:

Conceptualisation

Lecturers at South African universities need to be well-informed on the concept of OER. South African universities should introduce and offer continuous professional lecturer development programmes to expose lecturers to the concept of OER and its use in teaching and learning. These continuous professional lecturer development programmes cannot be overlooked, particularly for young lecturers who will still serve more years in the lecturing sector. Therefore, continuous professional lecturer development should be considered an awareness instrument for lecturers to be empowered or trained in the teaching practice, integrating lecturers who were not empowered or trained in the practice or development of OER, lecturers were conversant with the concept of using OER.

South African universities have also implemented teaching and learning policies that guide lecturers on using OER. These teaching and learning policies help mandate the use of OER in teaching and learning. In addition, these policies should address aspects such as awareness of the type of OER, intellectual property rights, and the reuse of OER in teaching and learning and professional development initiatives.

Use of OER

The study recommends the establishment of OER units on their campuses to put into motion all aspects related to OER-enabled pedagogy. The study also recommends that South African universities promote awareness of OER among their internal and external stakeholders to convince them to embrace OER so that they can implement it in their teaching and learning. The institutions should revise tuition policies to promote or advocate OER-enabled pedagogy. University libraries are strategically positioned to market OER continuously. Librarians need to work closely with the OER office to procure content for the repository and increase the number of deposits related to OER. University libraries and institutional OER units should be responsible for educational materials and collaborate to ensure a marketing mechanism that libraries can use to intensify awareness of OER. Their collaboration should lead to increased OER visibility at universities. Further investigations could include:

- The implementation of an OER strategy at private and public Technical, Vocational, and Educational Training (TVET) colleges and private universities.
- To promote and advocate OER-enabled pedagogy as part of an awareness strategy at South African universities other than those participating in this study.

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Chat GPT and Creative Writing: Experiences of Master's Students in Enhancing

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Abstract
Improving writing skills at all levels of education is a fundamental goal of education. ChatGPT as an artificial intelligence-based language model is recognized as a significant tool in the development of this skill. The primary objective of this research is to examine the impact of ChatGPT on the creative writing processes as perceived by master's students. In line with this goal, the research utilizes the semi-structured interview technique as part of qualitative data collection methods. The study group comprises master's students enrolled in a teacher training program at a state university in the Central Anatolia Region during the 2022-2023 academic year. The study group is formed through purposive sampling. The data obtained has been analyzed using the content analysis method. Accordingly, the research findings indicate that ChatGPT is an effective tool in enhancing creative writing skills. It accelerates the writing process for students, provides them with new ideas, and boosts their writing motivation.

Keywords: Artificial ıntelligence, Chat GPT, Creative writing, Master's level

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Introduction

The phrase attributed to Sait Faik Abasıyanık, "If I hadn't written, I would have gone mad" (Taşdelen, 2004), or R.M. Rilke's statement, "If I hadn't written, I couldn't have coped" (Şevki, 2009), is striking in terms of showing the relationship of a person with writing. Writing emerges as an existential reality that goes beyond being a tool for communication and culture; it is where an individual externalizes their inner world, concretizing their feelings, thoughts, and dreams. In this context, writing is a strategic tool for humans, an intellectual construct, a mental effort, a practical endeavor, and a practice of connecting with the past, present, and future. Moreover, it is an apparatus for thinking, learning, and communicating.

The text you have provided discusses the multifaceted nature of writing, as seen through the lens of various scholars. According to Sever (1988), writing is not only a means of expressing our thoughts, perceptions, designs, and experiences but also a way of communicating with others and narrating our own life stories. Coşkun (2007) and Karasevda (2010) define writing as the written expression of emotions, thoughts, events, observations, desires, and dreams. Demirel (2006) considers writing a skill of expression akin to speaking, while Özdemir (2007) describes it as the memory of humanity. Britton (1970) points out that writing is a process of organizing thoughts and presenting them within a meaningful structure, and Elbow (1998) argues that it is a creative process that aids individuals in exploring their inner worlds. In summary, these definitions highlight writing's roles in individual expression, cognitive organization, and social communication, emphasizing its dynamic nature as both a constructor of thoughts and a developer of individuals' creative and critical thinking abilities.

School is recognized as a transformative force in an individual's life, not only as a center for the transmission of academic knowledge but also as an environment where fundamental skills such as writing, critical thinking, and communication are developed. As Kellogg (2008) notes, writing skill holds critical importance in students' academic and personal development. Graham and Perin (2007) argue that writing enhances students' abilities to organize thoughts, express themselves, and communicate effectively with others. Research by Fisher and Frey (2010) demonstrates that writing skills have a significant impact on students' academic success. Graham and Perin (2007) also reveal that writing improves reading comprehension skills. Furthermore, a meta-analysis by Bangert-Drowns and colleagues (2004) indicates that writing activities positively affect student success, enhancing conceptual understanding and critical thinking skills. Similarly, Applebee and Langer (2013) suggest that writing allows students to retain what they learn and internalize knowledge effectively. Another study by Kim et al. (2021) confirms that writing fosters high-level learning and thinking skills in students. In conclusion, writing skills can be argued to be a fundamental educational tool that not only enhances students' academic achievements but also develops critical thinking, communication, and deep learning abilities. Therefore, emphasizing writing skills within the education system should be considered a significant strategy that supports multifaceted student development.

The skill of writing and its personal and pedagogical benefits have always been considered significant in human life, often referred to as "the most beautiful invention of the human mind" (Efendi, 1960). However, it is frequently noted that in Turkey, from primary school to university, students' written expression skills are not sufficiently developed (Arıcı, 2008; Akbayır, 2010; Babacan, 2003; Bağcı, 2007; Elkatmış & Toptaş, 2013; Öksüz, 2009; Temizkan, 2008). The challenges in this area manifest themselves not only in grammar and writing rules but also in the ability to express ideas in an organized, logical, and effective manner, as well as in formal aspects. For instance, Özdemir and Binyazar (1969) state that there are many individuals who, despite completing high school and university, cannot clearly articulate their thoughts, feelings, and plans to others. Demirtaş (1989) found in his research titled "University students' scanning of written sources and report writing skills" that students' written expression skills were at a moderate level, and one of the most noticeable deficiencies in the reports prepared was the inadequacy in form. Karakuş and Baki (2017) identified significant problems among teacher candidates in planning writing, connecting sentences, writing rules, and punctuation. In a similar vein, Calp (2019) has revealed that prospective teachers of Turkish language education face significant challenges in the use of language. Research indicates that deficiencies in students' writing skills are not only a serious educational issue in Turkey but also globally. The report published by the National Commission on Writing in the United States in 2003 documents that students' writing proficiency is not at the expected level and that this situation has not sufficiently improved over the years. In summary, it can be said that significant problems are encountered in writing at every type and level of education and that traditional educational processes have been inadequate in developing students' academic writing skills. This situation highlights the need to develop innovative strategies to enhance students' writing abilities. Strengthening educational programs, increasing writing practice, and making correct and

effective use of digital tools and platforms are steps that can improve students' writing skills. In particular, creative writing can be the key to advancements in this area by offering students the opportunity to develop their language skills and discover their creative thinking abilities.

The phenomenon of creative writing, which has a history extending back to ancient times, continues to be widely practiced today. The term "creative writing" is derived from the combination of the words "create" and "write." The addition of "creativity" before the act of writing not only lends the term an aesthetic and artistic dimension but also emphasizes that it is more than just an ordinary form of expression. Moreover, it characterizes the writing process as a magical one. In general, creative writing is a method of writing that aims to reveal an individual's creative abilities in writing and production (Gündüz & Şimşek, 2012). Şahin (2016) defines this process as the effort to create a new and original text by blending an individual's observations, sensations, readings, and impressions with their imagination and personal experiences, while Calp (2010) describes it as the process of transferring creative thoughts from the mind to paper. Harper (2006) states that creative writing is the process of expressing ideas and experiences in a unique and innovative way through literary techniques such as metaphor, imagery, and symbolism (cited in Seçkin Polat, 2023). To succinctly state, creative writing is the dance of imagination with words; it is an artistic process where an individual expresses their thoughts and emotions in an original and aesthetic manner. This method not only enhances an individual's writing skills but also enriches their world of thoughts and feelings and strengthens their expression abilities. Indeed, Karadağ et al. (2019) explain the benefits of creative writing as follows: Creative writing helps students to freely use their imagination, to care about how the writing is done, and to develop their vocabulary. Additionally, it contributes to an individual's self-discovery, reduces writing anxiety, boosts self-confidence, and positively influences their thoughts about writing. Creative writing, which enhances creativity and written expression skills, also improves thinking abilities. When combined with today's technologies, creative writing becomes even more effective, particularly as artificial intelligence applications offer innovative tools that support the writing process, helping students to unleash their creative potential and develop their writing skills.

Artificial intelligence (AI) has become a frequently heard term in recent years, aligning with the rapid advancements in technology. Broadly, this emerging technological field aims to design machines that can think, learn, and solve problems akin to humans. Russell and Norvig (2010) define artificial intelligence as "systems designed to perform tasks that would require human-like intelligence when performed by a human," while Copeland (2023) describes it as the ability of a computer or computer-controlled machine to perform tasks typically associated with intelligent beings. AI endeavors to emulate cognitive functions specific to humans, such as perception, learning, reasoning, problem-solving, decision-making, and communication (Poole, Mackworth, & Goebel, 1998). Alpaydin (2010) characterizes AI as a new technology that allows computers to mimic human thought, enabling them to make accurate decisions required for specific tasks.

In essence, artificial intelligence is the collective term for computer technologies and applications that emulate human cognition, encompassing thinking, learning, perception, problem-solving, and language processing (Alpaydin, 2010). Each new technology comes with its own unique function, and AI, spanning from healthcare to education, law to economics, security to entertainment, holds the potential to address numerous facets of life. The broad spectrum of applications relies on the ability of AI to interact with humans, analyze data, and learn. This is facilitated by a process known as natural language processing (NLP), a discipline enabling computers to process human language. NLP allows machines to understand, interpret, and reproduce human language, employing computer algorithms in the process (Bird, Klein, and Loper, 2009; Deng and Lin, 2022; Jurafsky and Martin, 2020). In other words, AI serves as an application domain enabling mutual communication and interaction between humans and machines, often considered the intersection of computer science and linguistics. In recent years, one of the most notable and widely used artificial intelligence applications is the ChatGPT language processing model developed by OpenAI.

ChatGPT 4, was commercially released on March 14, 2023, as the most advanced iteration of the ChatGPT 4 family. Promoted as more reliable and creative than its predecessor, the model was trained based on user feedback to deliver responses resembling human-like qualities. A notable feature of the fourth generation is its ability to interpret and process visual inputs. Additionally, it possesses skills such as composing songs, writing scripts, and learning a user's writing style (OpenAI, 2023). Trained with a vast amount of internet text data, thousands of books, and user feedback, ChatGPT can closely mimic the natural language patterns of humans (Zhang and Li, 2021). In general, ChatGPT can converse, write, and generate text in different languages, on various topics, and for different purposes. Its capabilities include answering questions, translating in almost any language, composing music, writing code, and processing visuals. However, despite these capabilities, GPT-4, like its predecessors, is not yet considered entirely reliable (OpenAI, 2023), emphasizing the need for accuracy and appropriateness checks in generated texts.

In recent years, artificial intelligence, particularly in the form of ChatGPT, has emerged as a groundbreaking development in various fields, including education (Allam et al., 2023; Atlas, 2023; Halaweh, 2023; Leitea, 2023; Mhlanga, 2023). Since its introduction, educators and researchers have explored its applications in education such as publication ethics (Graf and Bernardi, 2023;Rahimi and Abadi, 2023), higher education and plagiarism (Ivakhnenko, and Nikolskiy, 2023; King and ChatGPT, 2023; Sullivan, Kelly, and McLaughlan, 2023; Teel, Wang, and Lund, 2023), academic writing and authorship (Mahyoob, Al-Garaady, and Alblwi, 2023; Mondal, Mondal, and Podder, 2023; Yan, 2023), education and its relationship with ChatGPT (Al Ahmed and Sharo, 2023; Halaweh, 2023), language education (Kohnke, Moorhouse, and Zou, 2023), engineering education (Qadir, 2023), science education (Cooper, 2023), chemistry education (Leitea, 2023), and journalism and media education (Pavlik, 2023). It is evident that researchers in the fields of education have shown a heightened interest in ChatGPT.

As Lo (2023) notes, ChatGPT serves as an assistant for teachers and a virtual teacher for students, although caution is warranted due to its potential for generating imaginary or inaccurate information. The ability of ChatGPT to swiftly generate text, especially concerns related to students outsourcing their work to it, has become a prominent issue (Mhlanga, 2023). While there is a positive inclination towards the use of ChatGPT in education, there exists skepticism and concern regarding the risks it harbors (Kohnke, Moorhouse, & Zou, 2023; Yan, 2023). The capability of ChatGPT to generate text on any given topic is expected to bring it to the forefront, raising questions about its impact on the writing process, particularly the production of original and high-quality texts. However, the influence of ChatGPT on writing skills has not been comprehensively examined. This study will determine the opinions of university students regarding their creative writing experiences with ChatGPT. Accordingly, the sub-problems to be addressed in the study are as follows:

The research questions addressed in this study are as follows:
1. What are the experiences of master's students with ChatGPT?
2. What are the general opinions of master's students regarding ChatGPT's ability to enhance creative writing skills?
3. What are the views of master's students on the role of ChatGPT in the creative writing process?
4. What are the opinions of master's students regarding ChatGPT's ability to provide suggestions, corrections, and alternative expressions?
5. How do master's students perceive the impact of ChatGPT on enhancing creative writing skills?
6. What are the views of master's students on the role of ChatGPT in expediting creative writing skills?

Method

Research Design

This study has been conducted using the case study design, which is among the qualitative research approaches. Qualitative research is defined as a process that observes a realistic and holistic portrayal of perceptions and events in their natural setting, and is considered a fundamental approach to understanding life (Merriam, 2013; Yıldırım & Şimşek, 1999). The case study design, on the other hand, is a research method that allows for an in-depth examination of one or more events, environments, social groups, or interconnected systems (Büyüköztürk et al., 2016). The purpose of a case study is to conduct thorough research on a specified subject to uncover results related to a particular situation (Yıldırım & Şimşek, 1999). The case in this research involves the experiences of graduate students with creative writing using ChatGPT. This situation focuses on how ChatGPT affects the creative writing skills of the students and the role it plays in this process.

Study Group

In this research, a delimited universe, also referred to as the study universe in the literature (Arseven, 1993; Karasar, 1999), was utilized. The study universe represents the accessible population, and research is typically conducted within this limited universe, with findings being generalized only to this specific population (Karasar, 1999). For the current study, the study universe comprises master's students enrolled in a social sciences institute at a university in Turkey during the academic year 2022-2023. The participants in the study group were determined through purposive sampling, specifically utilizing the "convenient situation sampling" method. Purposive sampling is chosen for in-depth exploration of the research topic and gathering more data about the subject (Büyüköztürk et al., 2016). Convenient situation sampling, on the other hand, is preferred for its expediency and

ease of access (Yıldırım and Şimşek, 2008). Consequently, the study group consisted of 16 participants, including 14 female and 2 male master's students.

Data Collection Instrument

To collect research data, a semi-structured interview form developed by the researcher was utilized. The interview form was tailored for master's students following an extensive review of the literature. Based on the literature review, a question pool was created first, and then a semi-structured interview form was developed. To ensure the content validity of the form, feedback was sought from six academics, including four experts in writing skills in language education and two experts in artificial intelligence, natural language processing, and ChatGPT within the Computer and Instructional Technologies Education Department. Necessary adjustments were made based on the feedback received from the experts. Finally, to check the clarity of the questions, three trial interviews were conducted, refining the form accordingly. The developed interview form focused on the emotions, thoughts, and opinions of master's degree students regarding their creative writing experiences with ChatGPT, as well as the positive or negative impact of ChatGPT on writing skills.

Data Collection

This study was conducted as part of a master's course activity during the last five weeks of the spring semester of the 2022-2023 academic year. Prior to the activity, general opinions of students regarding their knowledge about ChatGPT were obtained. Upon the determination that the majority were not knowledgeable about ChatGPT, an introductory session about what ChatGPT is, its purposes, and how it can be used was provided in one class hour. Subsequently, practical exercises were conducted over two class hours. Students were then instructed to use ChatGPT to write three different creative texts over three weeks and bring them to class. The texts were collectively examined in class to ensure participants had sufficient knowledge and experience with ChatGPT. In the final stage, one-on-one interviews were conducted in the researcher's office. Measures were taken to ensure participants felt comfortable, safe, and free, addressing any potential issues related to participants or the environment. Before the interviews, participants were provided with instructions explaining the purpose of the study, the method to be followed, and how and where the research results would be used. Demographic information was obtained through brief questions during the approximately 15- to 20-minute interview process. Responses were recorded by the researcher both verbally and in writing. This method is considered the most ideal in interview-based research (Yıldırım and Şimşek, 1999). The researcher also took care not to be directive, to keep the conversation focused on the topic, and to provide equal speaking rights and time to participants during the interviews (Krueger and Casey, 2000; Yıldırım and Şimşek, 2005; cited in Yılmaz and Altınkurt, 2011). Additionally, the most suitable time frame for participants was determined, and efforts were made to create a comfortable and intimate atmosphere. The obtained recordings were analyzed by the researcher, resulting in 21 pages of data.

Data Analysis

The analysis of the data obtained in the research was conducted using the "content analysis" technique, considered a fundamental data analysis technique in qualitative research. Content analysis aims to reach concepts and relationships that can explain the obtained data (Sığrı, 2021). Similar data were grouped together under specific concepts and themes to be organized in an understandable manner. In this regard, the data were analyzed in four stages: 1. Coding the data; 2. determining the themes of the coded data; 3. organizing codes and themes; 4. describing and interpreting the findings (Yıldırım and Şimşek, 1999). The main purpose of content analysis is to transform non-verbal documents into quantitative data (Balcı, 2009). In this study, participant opinions were coded and presented with frequency and percentage values. The data were analyzed by the researcher. One of the most important characteristics sought in scientific research is reliability. In this context, to ensure the reliability of the data, records and transcripts were examined by another expert, and the two transcripts obtained were compared using Miles and Huberman's (1994) formula [Agreement / (Disagreement + Agreement) X 100]. The reliability between the two transcripts was calculated as 83%. Considering that the consistency rate between coders should not be below 80% (Miles and Huberman, 1994), the research findings were deemed reliable. Finally, the obtained data were tabulated, processed, and interpreted through direct quotation techniques while respecting the ethical principles by keeping the participants' identities confidential, using codes such as MP1 (male participant 1) and FP2 (female participant 2) in the records, and presenting direct quotations with these codes.

Ethical Approval

Ethical permission (Date: 20.11.2023-Number No 11) was obtained from Kırıkkale University Social and Human Sciences Research Ethics Committee for this research.

Results and Discussion

Below, the findings and comments reflecting master's degree students' opinions on their creative writing experiences with ChatGPT are examined in line with the predetermined sub-problems and presented sequentially. Firstly, the data regarding whether participants had information about ChatGPT, an artificial intelligence application, are summarized in Table 1.

Table 1: Master's Degree Students' ChatGPT Information and Experiences

Themes	Sub-Themes	n	%
Knowledge Status	Not knowledgeable	14	87.5
Usage Status	I am knowledgeable and I use it	1	6.25
	I have gained knowledge and experience for assignments	1	6.25
Toplam		**16**	**100**

When Table 1 is examined, the opinions of the graduate students participating in the study regarding their knowledge and experience with ChatGPT are considered within the themes of "Knowledge Status" and "Usage Status." Accordingly, the majority of the participants expressed that they do not have knowledge about ChatGPT (87.25%). In the theme of usage status, one participant (6.25%) mentioned knowing and using it, while another participant (6.25%) stated they gained knowledge and experience for homework purposes. Thus, it is understood that only two participants have knowledge and experience. Consequently, it is apparent that a significant portion of the graduate students does not possess adequate information about ChatGPT and has limited experience in using this artificial intelligence tool. This situation highlights the necessity of educational initiatives to increase students' awareness of technologies like ChatGPT. Some of the responses given by the participants within the scope of the research question are as follows:

FP 6: I have never heard of ChatGPT. Is this new technology?
FP 2: I used ChatGPT to gain knowledge and experience for my homework. It was very helpful!
MP 7: I am informed about ChatGPT but haven't used it extensively. However, I know it's a versatile tool, and I occasionally benefit from its features.

Within the scope of the research, the feelings, thoughts, and opinions of master's degree students regarding their creative writing experiences using ChatGPT were also examined. In this regard, the results obtained are presented in Table 2.

Table 2: General Views of Master's Degree Students on Creative Writing Experiences Using ChatGPT

Themes	Sub-Themes	f	%
Effects on Writing Skills	Enhances and is very beneficial to the development of writing skills	10	62.5
	Contributes to developing a different perspective	7	43.75
	Contributes to the expansion of vocabulary	5	31.25
	A good guide in correcting grammatical errors	1	6.25
	Develops the desire and enthusiasm to write	1	6.25
Usage and Auxiliary Functions	A friend that makes the writing process and assignments fun	5	31.25
	A knowledgeable assistant in every field	5	31.25
	Accelerates the text creation process	4	25
	Supports personal development, aiding self-discovery	4	25
	Gives the feeling of conversing with a human	1	6.25
Potential Negative Effects	Has the potential to make the human mind lazy	6	37.5
	The answers provided are not reliable	3	18.75
	Alarming as an alternative to humans in many areas	3	18.75
	Irregular and mechanical responses create additional workload	1	6.25
		1	6.25
Requirements and Recommendations	Awareness training should be provided for conscious use	2	12.5
Toplam		**59**	**100**

Upon examining Table 2, the general views of graduate students on their creative writing experiences using ChatGPT have been gathered under four main themes and fifteen sub-themes. Firstly, a significant portion of the participants (62.5%) have stated that ChatGPT has been helpful in developing their writing skills and found it very beneficial in this regard. Additionally, 43.75% of the participants have expressed that ChatGPT contributed to developing different perspectives. Positive effects have also been reported in terms of vocabulary enhancement (31.25%), correction of grammatical errors (6.25%), and fostering the desire and enthusiasm to write (6.25%). From the standpoint of "Usage and Auxiliary Functions," some students have described ChatGPT as a friend that makes the writing process and assignments enjoyable (31.25%), a knowledgeable assistant in every field (31.25%), a contributor to accelerating the text creation process (25%), and as support for personal development by helping individuals discover themselves (25%). Moreover, some participants have mentioned that ChatGPT gives the feeling of conversing with a human (6.25%). However, some students have also drawn attention to the potential negative effects of ChatGPT. 37.5% of the participants think that ChatGPT has the potential to make the human mind lazy, while 18.75% find the responses unreliable and 18.75% find it unsettling that it could be an alternative to humans in many areas. The irregular and mechanical nature of the responses could bring additional workload (6.25%) and may dull the writing desire by making an individual feel inadequate (6.25%). In the section on "Requirements and Recommendations," 12.5% of participants have argued that awareness training should be provided for the conscious use of ChatGPT. To summarize, it appears that participants have assessed the effects of ChatGPT on writing skills across a broad spectrum. The fact that the risks accompanying the advantages provided by technology have also been brought to the agenda suggests a critical approach to the subject. Some participant opinions include:

MP 8: ChatGPT can provide us with natural and satisfying answers to many of our questions, much like a teacher. It helped me make my text more effective and qualitative by creating different expressions, offering creative ideas, and providing different advice. It assisted me in correcting my mistakes and speeding up the text-writing process. I believe it will be very useful in many research tasks with time constraints, such as assignments and articles.
FP 13: It was an experience that far exceeded my expectations. The application is generally very nice but a bit intimidating. If technology continues to progress in this way, there will be no need for human experience and knowledge. People may become mechanized over time, becoming a generation that does not think and move. I think technology will continue to advance further, and we need to learn to use the right technology. Instead of being slaves to technology, we need to use it for the right purposes.

Another question addressed in the research is how ChatGPT assists master's degree students in the creative writing process. The results obtained in this regard are presented in Table 3.

Table 3: Master's Degree Students' Views on How ChatGPT Assists in the Creative Writing Experience

Themes	**Sub-Themes**	**f**	**%**
Contributions to the Writing Process	Helped develop new ideas	7	43.8
	Using suggestions and alternative expressions made the text more diverse and fluent	5	31.3
	Ensured the text became more qualitative	3	18.6
Negative Feedback	Deficiencies in correcting grammatical errors	1	6.3
Toplam		**16**	**100**

Upon examining Table 3, the perspectives of graduate students on how ChatGPT has assisted in the creative writing experience have been aggregated under two main themes. These are articulated as "contributions to the writing process" and "negative feedback." In terms of "Contributions to the Writing Process," 43.8% of participants indicated that ChatGPT helped develop new ideas during the writing process. Secondly, 31.3% of participants expressed that ChatGPT, through its suggestions and alternative expressions, made the text more diverse and fluid. In the final category of this theme, 18.6% of participants reported that ChatGPT enhanced the quality of the text. Regarding "negative feedback," 6.3% of participants pointed out deficiencies in ChatGPT's ability to correct grammatical errors. In summary, while ChatGPT offers significant advantages in supporting creative thinking, improving text flow, and enhancing text quality, it is emphasized that there are limitations in its grammar corrections. From this aspect, it can be argued that ChatGPT has the potential to improve creative writing skills, but further development is needed in terms of grammar. Some participant opinions exemplifying this aspect include:

FP 2: "ChatGPT, with its alternative word suggestions, elevated my text to a different level. It also helped in making my text more qualitative. However, I can say it lacks in correcting grammar errors. Perhaps correcting grammar errors with any additional plugin might be possible."

FP 5: "ChatGBT provided significant benefits in describing the setting and making descriptions when writing about any subject or story. Interaction with ChatGBT can offer us different perspectives, help us discover new ideas, and assist in developing different creative approaches. By working with ChatGBT, we can receive suggestions and inspirations, discover new expressions or word choices to make our texts more fluent."

As part of the research, features of GPT in creative writing, such as suggestions, corrections, and alternative expressions, were also examined. The results in this regard are presented in Table 4.

Table 4: Master's Degree Students' Views on Suggestions, Corrections, and Alternative Expressions While Engaging in Creative Writing with ChatGPT

Themes	Sub-Themes	f	%
Contributions of Suggestions and Corrections	ChatGPT's suggestions and corrections are very helpful	4	25.0
	ChatGPT's suggestions provide different perspectives on the subject	3	18.8
	ChatGPT's suggestions make the texts interesting and help in expression	3	18.8
	ChatGPT offering alternative expressions contributes to the originality of the text	2	12.5
Negative Feedback	The expressions in ChatGPT's suggestions are mechanical, artificial, and contrived	3	18.8
	ChatGPT's vocabulary usage is limited and insufficient	1	6.1
Toplam		**16**	**100**

Upon examining Table 4, the views of graduate students on the suggestions, corrections, and alternative expressions provided by ChatGPT during creative writing are gathered under two main themes. These are expressed as "contributions of suggestions and corrections" and "negative feedback." In the theme of "Contributions of Suggestions and Corrections," 25.0% of participants have indicated that ChatGPT's suggestions and corrections were very helpful. Additionally, 18.8% of participants have expressed that ChatGPT's suggestions allowed them to look at the subject from different perspectives. Similarly, 18.8% of participants have mentioned that ChatGPT's suggestions made the texts more engaging and helped them express themselves better. 12.5% of participants have stated that ChatGPT's offering of alternative expressions contributed to the originality of the text. In the theme of "negative feedback," however, 18.8% of participants have pointed out that the expressions in ChatGPT's suggestions were mechanical, artificial, and contrived. Furthermore, 6.1% of participants have expressed that ChatGPT's vocabulary was limited and insufficient. Overall, it is considered that ChatGPT's suggestion and correction capabilities could support the writing stages and enrich the creative writing experience by offering different perspectives. Nevertheless, it is understood that the texts are not yet at the desired level in areas such as naturalness, originality, and word choice. This situation indicates that the effects of ChatGPT in the writing process are generally positive, but there is a need for improvement in some areas. Some participant opinions regarding this are provided below as examples:

FP 14: I don't think it is insufficient in terms of word usage. However, the expressions in its suggestions appear mechanical and artificial. Some adjustments are needed afterward. When alternative expressions are used appropriately and in moderation, they make the text more original and engaging.
FP 1: For effective use in the context of creativity, one benefits maximally from this application by drawing inspiration from ChatGBT but also using their own creative thinking skills. I can say that the creative writing experience with ChatGPT has shown me how beautifully I can write, how I can look at things from different perspectives, and how much it contributes to enriching my writing. Even after finishing the work, reading the resulting texts made me realize that I didn't know I could write so well. I realized that with ChatGPT support, I can write long and engaging texts if I want to. Thanks to the creative writing experience with ChatGPT, I felt an improvement in my writing skills. There has also been an improvement in my vocabulary because ChatGPT can offer many suitable alternatives for existing words. This allows new words to take their place in your mind. I felt an opening, expansion, and clarification in my mind. Thanks to the creative writing experience with ChatGPT, I felt that my writing talent had developed.

The effectiveness of ChatGPT in improving the creative writing skills of master's degree students was also investigated in the study, and the findings are presented in Table 5.

Table 5: Master's Degree Students' Opinions on the Impact of ChatGPT on Writing Skills

Themes	Sub-Themes	f	%
Highly Effective	Very influential on writing skills	8	50.0
Somewhat Effective	Contributes to writing skills at a normal level	5	31.25
Partially Effective	Has some effect on writing skills	3	18.75
Toplam		**16**	**100**

Upon examining Table 5, the perspectives of graduate students on the impact of ChatGPT in enhancing writing skills have been aggregated into three main themes. These are articulated as "highly effective," "somewhat effective," and "partially effective." In the "Highly Effective" theme, half of the participants (50.0%) have indicated that ChatGPT has been greatly effective in improving writing skills. In the "Somewhat Effective" theme, 31.25% of participants have expressed that ChatGPT has contributed to writing skills at a normal level. Lastly, a group of participants accounting for 18.75% have stated that ChatGPT has had some effect on writing skills. In summary, while half of the participants believe that ChatGPT has been highly effective in enhancing writing skills, the remaining half has indicated that this effect is at a normal or slight level. This outcome can be interpreted as ChatGPT generally providing a positive contribution to writing skills; however, the degree of this contribution varies among students. Some participant opinions include:

FP 16: If you know how to use ChatGPT correctly and consciously, I can say that it greatly enhances writing or creative writing abilities.
FP 4: ChatGPT has been a good source of inspiration for me. I didn't allow it to guide me too much since I designed the course and direction of the text myself. I only used it to get ideas about topics I didn't know, to fill in gaps about historical places and subjects, and to create alternative sentences, which I found effective in this aspect.

The study also investigated the situation where ChatGPT accelerates the creative writing skills of master's degree students, and the findings are presented in Table 6.

Table 6: Master's Degree Students' Views on the Acceleration of the Writing Process by ChatGPT

Themes	Sub-Themes	n	%
Status of Accelerating Writing Skills	Yes	14	87,5
	No	2	12,5
Toplam		**16**	**100**

Upon examining Table 6, the perspectives of graduate students regarding the acceleration of creative writing skills by ChatGPT have been aggregated under two sub-themes. These have been categorized as "yes" and "no." Within the theme of "Acceleration of Writing Skills," a significant majority of participants (87.5%) have indicated that ChatGPT accelerates creative writing skills. On the other hand, 12.5% of participants have expressed that ChatGPT does not accelerate writing skills. In summary, the vast majority of participants believe that ChatGPT accelerates creative writing skills. This finding suggests that ChatGPT generally has a positive impact on the writing process. However, a small group of students think differently on this matter. Accordingly, some of the participant opinions are as follows:

FP 16: Crafting a sentence and starting it is easy, but expanding it with supporting statements is really challenging. ChatGPT makes these difficulties much easier. Additionally, providing an original idea for you allows you to progress without overthinking, generating alternatives to that idea.
MP 8: I think it is useful when I am not familiar with a topic or don't have enough information. For example, if I don't know about coffee places in Paris, it helped me quickly access that information, and thanks to its recommendations, I could find everything on one page with explanations.

Conclusion

Artificial intelligence, heralding a significant transformation in almost every aspect of life, plays a crucial role in shaping writing skills through tools like ChatGPT. This study, conducted to describe the opinions of graduate students on their creative writing experiences with this new technology, has gathered the views given by the participant students on the use of ChatGPT under 14 main themes and 34 sub-themes. The findings of the research have been discussed below, highlighting the prominent observations. Accordingly, it has been determined that the vast majority of the participant students lack knowledge and experience regarding ChatGPT. The majority of the participants were found to lack knowledge and experience with ChatGPT. Despite more than five months passing since ChatGPT became publicly accessible, the fact that it is not well-known among postgraduate students is a significant observation. The research implies a potential lack of awareness regarding developments in educational

technologies that combine essential components of academic life, such as writing and translation, through artificial intelligence tools.

Every innovation brings forth both positive and negative perspectives. In line with this judgment, the research findings indicate that master's degree students' views on ChatGPT's impact on their creative writing experiences exhibit a dual nature, encompassing both positive and negative judgments. More than half of the participating students expressed positive attitudes, stating that ChatGPT contributed to the improvement of their writing skills, provided different perspectives, enhanced vocabulary, and made the writing process enjoyable. This finding aligns with the results of Lin and Chang's (2020) research, aiming to enhance postgraduate writers' skills using a chatbot, where the group using the chatbot was found to be more successful than the non-user group.

According to Thorp (2023), ChatGPT is considered an entertaining tool, a perspective echoed by Aktay, Gök, and Uzunoğlu (2023), who found that students enjoyed and found interactive teaching processes designed and implemented with chatbots to be interesting. Therefore, the students' enjoyment of the writing process with ChatGPT aligns with the literature. This finding holds significance in two respects: first, it resonates with the general view that the use of technology in education makes the learning process easier, more enduring, and more enjoyable. Second, it corresponds to the understanding that affective factors positively influence the learning process (Bloom, 1979; Senemoğlu, 1987). Indeed, considering affective characteristics such as interest, attitude, value, motivation, and anxiety is recommended for students struggling with writing education (Karasakaloğlu and Saracaloğlu, 2009; Harris, Schmidt, and Graham, 1997). In this context, the use of chatbots in writing education is believed to contribute positively both cognitively and affectively.

However, a significant portion of the participants expressed negative judgments, suggesting that ChatGPT could make the human mind lazy, its information might be unreliable, and its versatility could pose a threat to humanity. These judgments echo the significant dilemmas discussed in the literature regarding the potential pitfalls of new technology. While technology facilitates tasks, it can also lead humans towards laziness (Avcı, 2022; Karagülle and Çaycı, 2014). These concerns align with the recognized risks in the relationship between technology and education confirmed by participants in previous studies (Kurtoğlu Erden and Uslupehlivan, 2020; Erten, 2019). However, taking an archaic approach to the issue, writing itself was initially viewed as a new technology, and there were concerns that it would dull human minds (Yalçın Çelik, 2015; Ong, 2018; Sanders, 2020). Contrary to expectations, writing has persisted as the founder, protector, and enhancer of thought and culture. Today, ChatGPT's ability to systematize thought, generate alternative views, assist in error correction, and provide instant feedback may indeed support and enhance the human mind. This perspective should be noted not as a futuristic claim but as a view entrusted to time.

As stated in the theoretical section, the responses generated by ChatGPT are not always accurate, and it has the potential to provide fictional and incorrect information. OpenAI, during the introduction of ChatGPT 4, emphasizes that the model is still not entirely reliable, advising caution in the use of the information it produces (OpenAI, 2023). Malik, Khan, and Hussain (2023) have also expressed concerns about the reliability and originality of information provided by ChatGPT, stating that not every piece of information can be relied upon, and issues may arise regarding its authenticity.

Forecasts about the potential capabilities of artificial intelligence and what it might achieve in the future evoke a skeptical and apprehensive approach. Considering that the majority of participants lack sufficient knowledge and experience with ChatGPT, this concern can be seen as a human reflex toward the "unknown new." However, this finding corresponds to an important issue discussed both in the written press (Küçükşabanoğlu, 2023; Üren, 2023; Demirtaş, 2023; Baycan, 2023) and academic literature (Yavuz Aksakal and Ülgen, 2021; Çark, 2020; Aktaş, 2022). According to these sources, the widespread use of artificial intelligence may lead to the disappearance of certain jobs and professions, resulting in unemployment for many individuals. Simultaneously, new and different job opportunities may emerge. On the other hand, members of some professional groups, especially healthcare workers, unanimously agree that they may lose their jobs with the proliferation of artificial intelligence (Civaner et al., 2022). In summary, the positive and negative judgments obtained in this study regarding ChatGPT parallel the literature. However, it is essential to note that both artificial intelligence and its application, ChatGPT, should neither be idealized for being new nor feared for being intelligent. Ultimately, it is a machine created with human will, and when you unplug it, it becomes nothing.

One of the significant findings obtained in the research is that master's degree students perceive ChatGPT as providing important advantages in their writing processes, particularly in encouraging creative thinking, improving

text flow, and enhancing text quality. While Bitzenbauer (2023) focused on the impact of ChatGPT on critical thinking skills in the context of physics education, Malik, Khan, and Hussain (2023) found that ChatGPT could enhance creativity and idea generation in their study with renowned academics. However, some studies suggest the opposite, claiming that ChatGPT poses a threat to critical thinking and creative writing skills (Livberber, 2023; Shidiq, 2023). Therefore, there is no consensus on the potential impact of ChatGPT on thinking skills.

Furthermore, writing is considered one of the most challenging language skills to acquire since it involves a complex process (Cheung, 2016). This process requires expressing emotions and thoughts accurately and effectively, applying language and narrative rules, possessing a rich vocabulary, fostering creative and critical thinking, and regular and continuous practice. Güneş (2007) argues that these complex processes used in the writing process are not only language skills but also elements that organize, develop, and make the mind effective. Additionally, language development experts such as J. Goody, Vygotsky, and J. Foucambert emphasize that writing is not just an action focused on language skills; it is also a significant tool for higher-level thinking (Güneş, 2007). Therefore, it can be hypothesized that there is a strong bidirectional relationship between writing and the mind, with each supporting and developing the other. From this perspective, considering ChatGPT's abilities to support and organize the writing process, such as systematizing and enhancing creativity (Livberber, 2023), it can be predicted that it may contribute to creativity by demonstrating both the systematic nature of writing and the possibility of different thinking.

The study investigates the contribution of suggestions, corrections, or alternative sentences and expressions provided by ChatGPT to the creative writing process. The majority of participants indicated that ChatGPT's suggestions and corrections positively influenced their creative writing experiences. In particular, it was emphasized that ChatGPT facilitates viewing the subject from different perspectives, makes texts interesting, and provides alternative expressions. Livberber (2023), in his study on designing academic articles with ChatGPT, confirms through practical applications that the new technology can consistently generate ideas about a text's purpose and focus, support it in terms of content, and provide reasonable correction and editing capabilities. These results are crucial, demonstrating that ChatGPT can be used as an effective support tool in the creative writing process. Considering ChatGPT's ability to organize information and generate alternative sentences and paragraphs, it can facilitate the challenging and complex writing process, making it both easier and enriching the text with integrity and richness.

This situation can also be explained by the process of collaborative learning. Collaborative learning is a significant learning approach that has been emphasized since the mid-twentieth century, suggesting that students contribute to each other's learning by working in small groups (Ün Açıkgöz, 2011). Additionally, recent brain research indicates that being in connection and solidarity with people and ideas positively affects the learning process by developing the mind (Boaler, 2022). Considering ChatGPT's possession of human-like thinking, learning, perception, problem-solving, and communication skills, it is possible to discuss a form of collaboration and cooperation between the user and the machine. This process, reaching a robust dimension with the ability of artificial intelligence to provide information like a teacher or writer on technical subjects, can play a significant role in the development of writing skills. However, for this collaboration to be effective, some factors need to be considered, including the limitations of artificial intelligence, users' adaptation processes to technology, and ethical issues. These factors are essential considerations for fully understanding the role of ChatGPT in education and specifically in writing education.

On the other hand, some students expressed that the expressions in ChatGPT's suggestions are mechanical, artificial, and artificial, and the use of words is limited and insufficient. Considering all these results, it can be said that ChatGPT has the potential to enrich the creative writing experience but needs improvement in areas such as the naturalness, originality, and word choice of the texts.

In the study, students were also asked to evaluate the contribution of ChatGPT to their writing skills. In this context, the vast majority of participants believe that ChatGPT has a positive impact on their writing skills. In the literature, it is predicted that ChatGPT will frequently be used in scientific writing, assignments, reports, and message writing (Koçyiğit and Darı, 2023). Although not directly addressing the impact of ChatGPT on writing skills, it is also suggested that it will support learning and teaching processes and increase productivity (Al Ahmed and Sharo, 2023; Sumakula, Hamiedb, and Sukyadi, 2022). Therefore, both this research finding and the literature suggest that ChatGPT can be effectively utilized for writing education and play a significant role in enhancing users' creative writing skills.

One of the significant results obtained in the research is that almost all participants believe that ChatGPT accelerates the writing process. This finding can be read as a reflection of the positive impact of this AI-based tool

on writing practice. Indeed, as mentioned earlier, ChatGPT can provide users with new ideas, alternative sentences, and words while also supporting tasks such as correcting and editing texts. Therefore, this feature opens the way for users to produce faster, more fluent, and more creative texts. Increased speed not only allows individuals to use their time more efficiently and effectively in activities such as research, examination, and assignment writing but can also lead to increased productivity. However, the innocent goal of speed that begins this process may later open the door to potential risks such as addiction or being limited to the information provided by the machine. The result of the former may lead to the disappearance of naturalness and originality, while the latter may result in writing shallow texts without sufficient thought. In summary, while the result that ChatGPT speeds up the writing process emphasizes the potential of this technology to support writing skills, it should be read with consideration for concerns about the naturalness, originality, and depth of thought. Therefore, it is crucial to establish and position the correct balance between humans, technology, and speed.

Recommendations

More comprehensive research can be conducted on the impact of ChatGPT on the creative writing process. These studies could delve into how ChatGPT influences students' creative thinking skills and its effects on the quality of texts.

It can be argued that the first application area of artificial intelligence technology in education will be writing and writing skills. Building on this, studies can be conducted on how artificial intelligence-based applications like ChatGPT can be used by teachers to teach writing skills and how they can support students' writing abilities.

Research can focus on ChatGPT's impact on students' written academic work, such as assignments, reports, and projects. These studies could evaluate ChatGPT's influence on academic writing processes and skills.

Ethical Approval

Ethical permission (Date: 20.11.2023-Number No: 11) was obtained from the Kırıkkale Üniversity Social and Human Sciences Research Ethics Committee for this research.

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Experiences of Parents of Children with Special Needs in the Process of Receiving Reports from Guidance and Research Centers

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Abstract
This qualitative phenomenological study explores the experiences of parents of children with special needs in Turkey, specifically their encounters with Guidance and Research Centers (GRCs) during the process of obtaining educational assessment reports. Through semi-structured interviews with 25 parents, the study reveals complex emotions and concerns over the assessment process, including the adequacy of assessment tools, the duration of evaluations, and the involvement of parents in the decision-making process. While many parents expressed satisfaction with the outcomes, significant issues were highlighted, such as the lack of communication between professionals and families and discrepancies in the accuracy of assessments and placement decisions. The research underscores the need for a more collaborative approach between parents and professionals, emphasizing the importance of improved communication, enhanced diversity of assessment tools, and longer evaluation periods to ensure a fairer and more comprehensive understanding of each child's unique needs. The findings also suggest that greater parental involvement in the assessment and placement processes could lead to better educational outcomes and increased satisfaction for families. These insights have important implications for future policy and practice in special education assessment and support in Turkey.

Keywords: Special needs, Guidance and research centers, Parental experiences, Evaluation processes, Qualitative interviews

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Introduction

In recent years, the role of Guidance and Research Centers (GRCs) in Turkey has become increasingly important in the educational environment, especially in the context of special education and psychological counseling services. The first GRC opened in Turkey in 1955 and was modeled after the Child Guidance Clinics in the United States (Kiye, 2024). As of the 2023-2024 academic year, the number of GRCs has reached 297 (Ministry of National Education, 2023), and they are responsible for planning, providing, and coordinating special education services as well as guidance and psychological counseling services in provinces and districts (Karal & Ünlüol Ünal, 2020; Nazlı et al., 2021). Furthermore, GRCs are tasked with the important responsibility of conducting "educational assessment and diagnosis" for students with special needs; this process includes assessing these students using existing assessment tools and sharing the results with their families (Dayı et al., 2022).

However, when the studies on the participation of parents in the educational processes of children with special needs are examined, it is clearly seen that the involvement of parents in the processes is important in terms of contributing to the development of children with special needs in all areas. Research shows that when professionals such as parents, teachers, therapists, and counselors work together, children with special needs achieve better academic performance, better social skills, and improved self-esteem (Blue-Banning et al., 2004; Griffiths et al., 2021; Trainor, 2010). This collaborative approach fosters a shared understanding and mutual respect between parents and professionals, leading to the development of more effective individualized education plans (IEPs) that respond to the unique needs of each child (Turnbull et al., 2011).

Moreover, the collaboration between parents and professionals is based on the principles of family-centered practice, which recognizes the important role of the family in the child's life and education. This model is known to improve educational planning and practices for children with special needs by promoting open communication, respect, and active parental involvement in decision-making (Espe-Sherwindt, 2008; King & Chiarello, 2014; McCarthy & Guerin, 2022). In addition, such collaboration is known to positively influence parental satisfaction, family stress, and educational services (Harry, 2008; Lalvani, 2015). Therefore, guiding parents and professionals towards strong and respectful collaboration is not only beneficial but also necessary to ensure the holistic development and academic success of children with special needs.

Parents' involvement in the education of children with special needs, along with their interaction with professionals, is one of the critical factors that significantly influences children's academic achievement and social development. Research shows that when parents are actively involved in their children's education, this leads to better educational outcomes for children with special needs, including greater academic achievement and increased self-esteem (Driessen & Sleegers, 2005; Henderson & Mapp, 2002; Hirano & Rowe, 2016; Jeynes, 2007). Moreover, parents are known to greatly benefit from a consistent and collaborative home-school partnership, as their direct involvement in education provides a supportive and understanding environment that is crucial for the development of children with special needs (Spann et al., 2003; Šukys et al., 2015). In addition, parental involvement not only is beneficial for children but also empowers parents by giving them a voice in their children's education and ensuring that their needs and concerns are addressed (Fish, 2008; Goldman & Burke, 2017).

On the other hand, the legal framework regulating the functioning of GRCs in Turkey emphasizes the cooperation between the institution and the family in 42 places in the relevant regulation and considers parents a natural part of the functioning of the institution (Guidance and Research Center Directive, 2020). Parents apply in person to obtain an educational report for their child with special needs, and then the GRC takes an active role in line with the relevant guidelines and evaluates the child with special needs. As a result of the evaluation, the positive or negative opinion for the child to receive an educational report is notified to the parent. In the process of obtaining an educational report, the opinion of the parent is taken if deemed appropriate; otherwise, the evaluation process is carried out unilaterally by the GRC. Despite the references to families in the relevant regulation, families do not actively participate in the evaluation process in practice (Dayı et al., 2022). This situation indicates that family support and cooperation are not actively used in the educational evaluation of children with special needs. In addition, although the family is a natural member of the IEP preparation committee in the preparation of the Individualized Education Plan (IEP), which plans the process in which the student will receive education, together with the report received from the GRC, their responsibilities in the functioning and their position in the committee as stakeholders are not clearly explained. The passive position of families in the IEP preparation process is observed not only in the Turkish sample but also in other countries (Heiskanen et al., 2021; Miles-Bonart, 2002; Zeitlin & Curcic, 2014). Zeitlin & Curcic (2014) reported that during the IEP preparation process, parents reported that the IEP turned into a process of preparing documents, that the plan was prepared with a tendency to follow

the rules instead of cooperation, and that IEP meetings were held with a more formalist approach. Families cannot be integrated into some processes as expected in the long-term educational journey they embark on with their children with special needs, and educational planning, such as IEPs, has become a bureaucratic routine. For this reason, the experiences of parents during the process are very important for the efficiency of educational activities, the meaningful development of students, and the continuity of legal rights in general.

Despite the important role of GRCs in the education system, there is a gap in the literature regarding the participation and experiences of key stakeholder groups, namely, parents of children with special needs (Karasu, 2014). The bureaucratic functioning of GRCs often reduces parents to a passive role, receiving only information about the evaluations and decisions made about their children (Sarı et al., 2023). This lack of participation and the fact that the functional roles of parents in the evaluation process have not been sufficiently investigated are important deficiencies in existing studies.

Purpose of the Research

In this context, the experiences of parents in the process of receiving reports from GRCs for individuals with special needs have the potential to provide important data both for improving bureaucratic processes in the process of receiving educational reports and for clarifying the roles of parents in the process. Obtaining the opinions of parents who have had experience receiving educational reports is highly important for guiding parents who have not yet been involved in this process and providing a different perspective to administrators and professionals working in GRCs. From this perspective, this study examined the experiences of parents in the process of receiving educational reports for their children with special needs within the framework of the following research questions:

1. What are the views of parents of children with special needs on the application process at GRC?
2. What are the opinions of parents with children with special needs about the evaluation process at the GRC?
3. What are the opinions of parents of children with special needs about the results of the evaluation at the GRC?

Method

In this section, information on the research design, study group, data collection tools, data collection, analysis, and reliability is given.

Research Design

Since this study aimed to reveal the experiences of parents of children with special needs in the process of receiving a report from the GRC, it was conducted in a phenomenology design within the scope of a qualitative research approach. Creswell (2016) defines phenomenology as a research approach that allows for a comprehensive examination of how participants experience the phenomenon in their lives. It is aimed at describing the lived experience from the perspective of individuals who encounter the phenomenon to reveal their feelings, perceptions, thoughts, how they structure them, and the state of consciousness they create for themselves (Patton, 2002). The main reason for using phenomenology in the study was to examine the views of parents who received reports from the GRC for their children with special needs.

Participants

The study group consisted of 25 parents of children with special needs living in Rize Province. Creswell and Poth (2016) emphasize the importance of data saturation in qualitative research. Data saturation occurs when new participants or data no longer provide additional insights or change emerging themes. This concept suggests that the sample size for semi-structured interviews should be sufficient to reach a point where new participants do not significantly change the findings or themes emerging from the data. When it was determined that the information obtained during the interview process was repetitive, data saturation was reached, and the data collection phase was terminated. In sample selection, convenience sampling was preferred. This sampling method is preferred because it is economical in terms of speed, practicality, and application (Yıldırım & Şimşek, 2018). Information about the parents who participated in the study is given in Table 1.

Table 1. Participant Characteristics

Code Name	Mother's Age	Child Age	Child's Disability Type
P-1	34	11	Multiple Disabilities
P-2	33	10	Intellectual Disability
P-3	44	20	Multiple Disabilities
P-4	44	17	Intellectual Disability
P-5	52	18	Multiple Disabilities
P-6	44	6	Intellectual Disability
P-7	34	12	Intellectual Disability
P-8	34	12	Intellectual Disability
P-9	42	18	Intellectual Disability
P-10	43	10	Intellectual Disability
P-11	38	8	Intellectual Disability
P-12	36	9	Intellectual Disability
P-13	39	11	Multiple Disabilities
P-14	35	7	Intellectual Disability
P-15	42	12	Intellectual Disability
P-16	39	13	Intellectual Disability
P-17	44	16	Intellectual Disability
P-18	42	11	Multiple Disabilities
P-19	36	6	Multiple Disabilities
P-20	39	9	Intellectual Disability
P-21	41	13	Intellectual Disability
P-22	38	9	Intellectual Disability
P-23	38	12	Intellectual Disability
P-24	35	10	Intellectual Disability
P-25	37	11	Intellectual Disability

As shown in Table 1, all the parents who participated in the study were women. The mothers were 33–52 years old (mean 39.32), and their children were 6–20 years old (mean 11.64). Six of the parents' children had multiple disabilities, 19 of whom had intellectual disabilities.

Measurement Tool

In this study, the "Demographic Information Form" and "Semi-structured Interview Form" developed by the researchers were used. The demographic information included information about the ages of the parents, the ages of their children with special needs, and the types of disabilities. Semi-structured interview questions were developed by examining the studies conducted in the literature to determine the experiences of parents of children with special needs in the process of receiving reports from guidance and research centers. The semi-structured interview questions consisted of seven questions and 14 sub-questions (Appendix 1). The questions were sent to five field experts for review and evaluation by creating an expert evaluation form. In the selection of the experts, it was ensured that they had a PhD and were experienced in phenomenological studies. In line with the expert feedback, the researchers removed one question from the interview questions, and two questions were combined and reorganized as one question.

A pilot interview was conducted with one parent to determine whether the questions were understandable to the parents. In the interviews, a demographic information form and semi-structured interview questions that were revised as a result of expert feedback were used. The interviews were audio recorded so that they could be transcribed for later analysis. With the pilot interview, it was determined that the questions were understandable to the parents.

Validity and Reliability

Validity and reliability are among the most important criteria for evaluating the quality of research, especially in the data collection and analysis processes (Mohajan, 2017). Since qualitative research is different from quantitative research in many ways, the concepts of credibility instead of internal validity, transferability instead of external validity, consistency instead of internal reliability, and confirmability instead of external reliability are used (Lincoln & Guba, 1985). In this study, the following steps were taken to ensure credibility, transferability, consistency, and confirmability.

Credibility

In order to increase the credibility of the study, support was received from three field experts in measurement and evaluation and content analysis in the process, from the development of the data collection tool to data analysis. In addition, the credibility of the study was reinforced by including the statements of the participants in the findings section.

Transferability

In order to increase the transferability of the research, direct quotations were made from the statements of the participants regarding the themes obtained as a result of the data analysis. In addition, frequencies were added next to each code to show the number of participants who shared the same opinion.

Consistency

A consistency review was conducted to ensure the consistency of the research. The purpose of this review is to evaluate whether the researcher is consistent throughout the research process (Yıldırım & Şimşek, 2018). In this direction, the data were first coded separately by the researchers, then the codes and sub-themes obtained were compared, and a consensus was achieved to a great extent. Afterwards, the consistency of the research was ensured by determining the themes and finalizing the data analysis.

Confirmability

In order to ensure the confirmability of the research, all studies carried out and data obtained during the research process are meticulously preserved for review when necessary.

Data Collection and Analysis

The parents to be interviewed were contacted by phone in advance, informed about the scope of the study, and asked whether they would like to participate in the study. Appointments were made with the parents, who responded positively according to their availability. Before starting the interview with the parents on the determined day and time, the ethics committee permission document was shown, the prepared research permission document was signed, and the demographic information form was filled out. Then, the voice recorder was turned on, and the interviews were conducted and recorded with the prepared semi-structured interview questions. The interviews with the parents lasted at least 26 minutes and at most 44 minutes (average 38 minutes).

The audio recordings obtained because of the interviews were transcribed without any changes by giving codes to the parents participating in the study. Before starting the data analysis, three of the transcripts (30%) randomly selected from the transcriptions were listened to and verified by a research assistant who is a PhD student in the field of special education, and the data analysis started after 100% reliability was achieved.

Ethical Approval

Ethical permission (07/10/2022 - 2022/186) was obtained from Recep Tayyip Erdogan University Ethics Committee for this research.

Findings

Three main themes were identified: application, evaluation, and outcome. The main theme of the application was formed by the subthemes of who referred you, making an appointment, and being welcomed and waiting. The main theme of evaluation is composed of the subthemes of what happened during the evaluation, information about the evaluation tools, evaluation environment, evaluation period and timing, exchange of opinions, and

thoughts about the evaluation. The subthemes that made up the main theme of Conclusion were opinions about the placement, opinions about the report, opinions about the staff, opinions about the regular renewal of GRC reports, how the report was felt when it was received, the process of delivering the report, information about the result, and another situation to be mentioned.

Application

The main theme of the application, which constituted the findings of the research, was formed by the subthemes of who referred, making an appointment, and being welcomed and waiting. The themes, subthemes, and codes of parents' views on the application are presented in Table 2.

Table 2. Parents' views on the application

Themes	Subthemes	Codes	*f*	*n*
Application	Who Directed?	Doctor	13	13
		Special Education and Rehabilitation Centers	10	10
		Physiotherapist	1	1
		School	1	1
	Making an Appointment	Special education and Rehabilitation Centers	17	16
		Individual application	5	5
		Call by phone	4	4
	Welcoming – Waiting	Good and sufficient	28	25

Who Directed?

More than half of the parents who participated in the study stated that they were directed by the doctor to evaluate their children. For example, "After receiving the doctor's report, the doctor told us that we should go to GRC" (P. 12). Another participant stated that "we were told by the hospital, so when we had a special child, we first applied to the GRC for his or her education for his or her development" (P. 5).

Some of the participants stated that they were referred to the GRC by special education and rehabilitation centers. This can be considered a remarkable finding. Individuals with special needs, according to a doctor's report, should first be evaluated by the guidance and research center and then referred to a special education and rehabilitation center. For example, "I went to a special education and rehabilitation center; they referred me there, and that is how we applied" (P. 1).

Regarding the referral process to the GRC, one of the participants stated that they were referred by the physiotherapist and the other by the school. Participant 3 stated, "Our physiotherapist referred us to GRC," while participant 8 stated, "I applied to the school to start school, and they referred us there."

Making an Appointment

Regarding making an appointment with the GRC, most of the parents who participated in the study stated that their appointments were made by the special education and rehabilitation center. For example, participant 10 said, "We started physical therapy. The doctor recommended physical therapy. I met with the rehabilitation center, and the rehabilitation center made an appointment. They are currently following the appointments." Participant 4 said, "The rehabilitation center made an appointment and informed me. I took my child to the center."

Some of the parents stated that they received appointments from the GRC by applying in person, while others stated that they received appointments by calling by phone. For example, "We went in person and got the appointment with our report this way" (P. 23), "I went myself. There was no appointment process at that time. For example, I went there, and they started the reporting process"(P. 17).

Welcoming – Waiting

In the interviews, all participants stated that the welcome and waiting process was good and sufficient. Some of the participant statements related to this subtheme were as follows: "We did not wait long because we went with an appointment. Intelligence tests were performed; whatever was needed. I did not experience anything negative" (P. 10), "I am welcomed well when we go to the GRC. I say what comes from my heart; I do not see such disrespect in any way. I mean, they welcome me well" (P. 8). "I have always been welcomed well at the GRC, so I have never had any problems there" (P. 16).

Evaluation

Participants' views on the main theme of evaluation are presented in six subthemes: evaluation environment, knowledge about evaluation tools, evaluation duration and timing, experiences during evaluation, thoughts about evaluation, and exchange of views. Parents' views on the evaluation are presented in Table 3.

Table 3. Parents' views on the evaluation

Themes	Subthemes	Codes	*f*	*n*
Evaluation	Evaluation Environment	Adequate and good	24	20
		No opinion	6	4
		Can be improved	2	1
	Information about the Evaluation Tools	Parents' lack of knowledge	18	15
		Inadequate assessment tools	8	7
		Parents informed about assessment tools	1	1
		Assessment tools are good, but the way of implementation is wrong	1	1
		Previously, there were no assessment tools	1	1
	Evaluation Duration	5-15 minutes	4	3
		15-20 minutes	20	18
		30-45 minutes	5	4
	What Happened During the Evaluation	I was with my child	20	18
		They measured what you can and can't do	6	4
		My child was under the influence of drugs	1	1
		I was not present when my child was being evaluated	1	1
		The evaluation was done by asking questions to the parents	1	1
	Thoughts about Evaluation	Not satisfied with the evaluation results	16	15
		Satisfied with the evaluation results	10	10
	Opinion Exchange – Interview	We exchanged opinions	24	22
		We did not exchange opinions	3	3

Evaluation environment

Most of the parents who participated in the process of receiving a report at the GRC with their children stated that the assessment environment was adequate and good. For example, participant 4 stated that "it was adequate for my child," participant 10 stated that "the evaluation environment was good and adequate," and participant 1 stated that "the environment was very good." Some of the parents stated that they had no opinion on this issue, and one of them explained that the physical environment should be improved as follows: "We do not enter with the children during the assessment. So, I do not know the assessment environment" (P. 4), "physical conditions can be improved a little. The environment is not improved, but I think it can be improved" (P. 7).

Information about the Evaluation Tools

Some of the parents who participated in the study stated that they did not have any information about the tools used in the evaluation of their children with GRC. Participant 3 said, "I do not know what they used; I did not see what kind of things they put in front of him/her," while Participant 1 said, "I do not have any information about the evaluation tools." Some participants stated that the assessment tools were inadequate. For example, "I think the assessment tools are also inadequate because they are not very developed. The tools used in assessments can sometimes be relevant to the child. Sometimes not" (P. 21). Another participant said, "For example, there were some things. They gave them paper and made them do things such as write, draw, and so on. I did not see any extra advanced tools; I did not see any interesting materials; I did not see any materials that I wondered if there was something like this" (P. 9). One of the participant parents stated that she thought that a test and the evaluation made during this period were insufficient for diagnosis, as follows: "They subject the child to a test, but in my opinion, this is insufficient to diagnose the child" (P. 13). However, another parent stated that her child did not want to touch the materials included in the assessment tools: "They tried to attach Legos to my child. Since my child is heavy, he does not touch the objects much; he does not like contact" (P. 19). Only one participant stated that she was informed about the assessment tools by the practitioners during the GRC evaluation process. Participant 10 stated, "I was informed about the assessment tools. You also see what they are doing." There was one parent who thought that the materials were good, but the way they were applied was wrong. Her statements are as follows: "They are very nice, and I just do not like one thing about the tests. I took the educational assessment test when I was a mainstream kindergarten student. There is a rule for these tests. No talking. He just shows the example and says to do the same with his hand. He shows it with his hand, like you will do the same. The materials are good, but the way of applying them is very wrong. The evaluation approaches are good, but we do them without talking. They just stand there. In my opinion, the way of implementation is wrong" (P. 5). The last finding that constitutes this main theme includes the views of a participant who emphasized that there was no assessment tool before. Participant 2 expressed his views as follows: "They did not have much of an evaluation tool before. They write what I say. My child has severe physical and mental disabilities. They ask me, "Does he hold a pencil? My child is just starting to hold a pencil. At most, they would give him a pencil and a toy. There was no such material."

Evaluation Duration

Participants' opinions on the duration of the evaluation of individuals with special needs in GRCs differed between 15–20, 30–45, and 5–15 minutes. In this subtheme, which is among the most striking findings, more than half of the participants stated that the evaluation time of their children with special needs was 15-20 minutes. For example, participant 6 said, "As I said, the interview times are very short. How much can they observe a child in 15 minutes or 20 minutes? I mean, how much can be done with a child in 20 minutes?". Another participant expressed her views as "I do not believe that they can learn anything from my child in 15-20 minutes" (P. 9).

A small number of participants who stated that the evaluation period lasted between 5 and 15 minutes said "5-10 minutes, 15 minutes at most, maybe not even that long" (P. 19) and "Of course they observe the child for 10 minutes, but that observation process is so short that I think it is not healthy" (P. 7). Again, the participant statements indicating that the evaluation process lasted between 30-45 minutes were as follows: "I did not keep a clear minute, but 25-30 minutes" (P. 10) and "Half an hour or so does not take very long; I can say 45 minutes at most" (P. 6).

What Happened During the Evaluation

Most of the parents who participated in the study stated that they were with their children during the evaluation. Participant 1 said, "I was with my child. Since my child has a walking disability, they were making them do things like holding a pencil, coloring, and standing," while another participant, participant 4, said, "I was also with my child."

Regarding what was done during the evaluation at the GRC, some of the parents stated that they tried to measure what their children could and could not do. One participant said, "They tried to measure the child's skills. What does he/she do? How much skill does he/she have? Can he/she put on and take off his/her clothes? Can he/she eat?" (P. 15), while another participant said, "They do tests and stuff; they are alone with my child" (P. 9).

Regarding what happened during the evaluation, one participant said, "When we went, he had started taking psychiatric medication. When we went, he was a little drunk at first, so I can say that the child was in sleep mode.

How can the child be evaluated? The child was not fully conscious. The first time we used this medication, it gave us a lot of sleep mode" (P. 23), drawing attention to the fact that her child could not show her real performance during the assessment due to the medication she was taking. Another participant (P. 11) said, "They did not take me and the child together; I thought this was the procedure. I do not know how my child was evaluated; I do not know what was done; believe me, I did not see it" and explained that she had no information about what happened during the evaluation. Another participant (P. 2) stated that the evaluation was carried out by asking the parent questions with the words "they were asking me during the evaluation, can he/she walk around, can he/she do it, can he/she do it."

Thoughts about Evaluation

A striking finding in the analysis of the parents' opinions on evaluation is that they stated that sometimes healthy decisions are not made. More than half of the participants stated that they had this view. Some of the participant statements on this issue are as follows: "I do not see GRC evaluations as much; GRC does not know my child. They evaluate them according to themselves" (P. 9), "They take children individually. After the evaluation, a healthy decision may not come out." (P. 3), "They told me that mainstreaming is not possible in special education classes. I objected and was successful. When my child was 5 years old, I fought the same struggle again. I objected again, which is why I objected. I see my child. I am among the good ones with Down syndrome, and I also get the opinions of the teachers in the kindergarten class at school. The child can be an inclusion student. I do not think the decisions are always healthy." (P. 11).

Some of the participants expressed that they were satisfied with the evaluation. For example, "I think the evaluation there is good as a parent if you are interested in the child one-on-one and if you are in good communication with the teachers at the school and the rehabilitation center. When I go there, I ask them in detail what I should do, and they help me." (P. 17), "the evaluation was good; there were no problems; it was very good" (P. 12). Only one parent stated, "I did not have any thoughts about this issue" (P. 25).

Opinion Exchange – Interview

The last subtheme regarding the evaluation conducted by parents of children with special needs in GRCs is the exchange of opinions about the evaluation with GRC staff. Almost all of the parents stated that they exchanged views with the teachers working at the GRC. Participant 10 said, "We definitely have a meeting after our child is released. We ask questions about the child," while one participant said, "Afterwards, of course, they interview me and talk to me."

A small number of participants stated that they did not exchange any opinions about the evaluation. For example, "there was no interview personally, no, no" (P. 8). Notably, two participants thought that the interviews with the families were not important. In this regard, participant 3 said, "They do not take into account what the family talks about," while participant 5 said, "We exchange views, but it just stays there. Therefore, it has no importance. I mean, our meetings, they just listen to us."

Results

The participant opinions that constitute the main theme of the results are presented in six subthemes: opinions about the report received, opinions about the staff, delivery time of the report, information about the results, opinions about placement, and regular renewal of the GRC reports. Parents' views on the results are presented in Table 4.

Tablo 4. Parents' views on the results

Themes	Subthemes	Codes	*f*	*n*
Results	Thoughts on the Report	Satisfied	20	20
		Not satisfied	5	5
	Opinions about the Staff	Adequate	25	23
		Insufficient	2	2
	Opinions on the Delivery Time of the Report	7-10 Days	24	24
		1-2 Month	1	1
	Information about the Results	I went and got it myself	19	19

	I received a report from a Special Education and Rehabilitation Center	6	6
Placement Views	Positive views	18	16
	Negative views	10	9
Opinions on the Regular Renewal of GRC Reports	Positive views	16	13
	Negative views	8	7
	Evaluation should not be done for each individual	3	3
	Reports should get updated more frequently	2	2

Thoughts on the Report

Although parents of children with special needs expressed criticism and concerns about some issues in the previous findings, most of them stated that they were satisfied with the reporting process and the outcome. Sample participant statements are as follows: "My teacher did not come across me, but a friend of mine was not satisfied at all. I do not know if it is because my child is different or not" (P. 18); "I think it is good; they measure the level of the child. It is a good thing" (P. 10).

Participant 3, one of the participants who expressed a negative opinion about the report, said, "I mean, how should I put it? Our incidence was at an intermediate level, even though the child was light. We objected, he was observed again, and he was taken back to a mild level. It should be based on what other teachers observed, so I am not satisfied."

Opinions about the Staff

Almost all the parents stated that the staff working at the GRC were good and adequate. Sample participant examples are as follows: "I did not encounter a person with such an attitude; I did not encounter a different process" (P. 3), "I think the staff was adequate; they were interested in my child and me" (P. 14), and "my opinions about the staff are positive; I think they are positive" (P. 22). Only participant 2 expressed the opinion that there was a lack of personnel and said, "There is a difference between now and the first time. In the early days, there were no physiotherapists. There were psychologists to evaluate your child, but no physiotherapist."

Opinions on the Delivery Time of the Report

Almost all the parents with children with special needs stated that GRC evaluation reports were issued within a week to 10 days. Participant 6 stated that "the report comes out within approximately 10 days," while participant 4 stated that "it took approximately 10 days for the report to come out." One participant (P. 5) explained that he received the report in close to a month, saying, "I mean, it does not exceed a month; it comes out around that time." Another parent (P. 1) stated that she received the evaluation report in "I do not remember, but one or two months."

Information About the Results

Regarding how the parents received the evaluation reports and how they were informed about the results, most of the participants stated that they personally went to the GRC and received the report. For example, "we received a message (SMS) that the report was out, so we went and got the report" (P. 2), "they say your report is out, you can get it, and we go and get it" (P. 9), and "they give us the file, that is how. We photocopied one for ourselves and gave the other to the special education and rehabilitation center" (P. 12). Other participants stated that they received the evaluation report from the special education and rehabilitation center. Participant 3 said, "The results in the form of a report are sent from the guidance and research center to the institution where we work, and we receive them from there." Participant 7 expressed his views by saying, "I even learn from the special education rehabilitation center what is written in the report."

Placement Views

The views of the parents who participated in the study regarding the placement of their children in an educational institution as a result of the evaluations made at GRC were mostly positive. Participant 1 said, "My child is receiving education and physiotherapy. I think it is very good; I think positively about the report; my child is already sick." Another participant with the same opinion stated, "The children are our children; we want them to do what they can do. I think the placement results are good. Because now what will these children do when they finish high school?". Some of the parents expressed negative opinions about the placement results. Sample statements are as follows: "During the evaluation, especially the rehabilitation center knows our child more. The most accurate information about the child's development should be obtained from him or her, and what this child needs and what gains he or she needs to gain should be taken from the teachers in the rehabilitation center who know the child better" (P. 9): "My child is currently in a middle-weight class in a school. Therefore, there is nothing we can do. The GRC makes a decision. It does not even know how the school it sends him to is doing, whether there are special educators in the school it sends him to or not. It is not interested in them at all; it just decides there, and that is it" (P. 24).

Opinions on the Regular Renewal of GRC Reports

The participants' parents expressed mostly positive opinions about the regular renewal and review of the evaluation reports of individuals with special needs by the GRC. P. 6 said, "I think it makes sense, teacher. Because children are evaluated every year. According to his or her condition, they give him or her education. I mean, I think it is a good thing because the child grows as time passes. He starts to do some things, and he can receive education accordingly. I think it is good that it is done annually." One of the participants (P. 17), who expressed a negative opinion about the regular renewal of the reports, stated that "every year regularly, if the report is renewed from the hospital, then an arrangement is made. For example, if the report is for two years, they do not call us there. They call us every two years. They do not give much information or do anything there. It is just a formal call. With a few questions, take the child and go in for development. How is this child doing? What can he or she do? There is no such thing as a counselor examining the child." Some participants stated that regular renewal and review of the evaluation report may not be performed for every child. For example, participant 3 said, "I do not think it should be organized for every child. It should be organized for children who are likely to get better. It is not necessary for my child to get a report. My child's condition is clear; he is 97% disabled. It should not be for every child." A different participant parent expressed the opposite view, saying that the evaluations should be performed more frequently; "if they were investigated a little better, if they were done more frequently, the report would be better."

Discussion

This study examined the experiences of parents of children with special needs regarding the process of obtaining a "Special Education Evaluation Board Report" for their children from Guidance and Research Centers (GRC). The results of the research were grouped under three main themes: the application process for obtaining a report, the process of evaluating the educational needs of children with special needs, and the results of the report.

The findings reveal that most parents are referred to the Guidance and Research Centers (GRC) by doctors to initiate the process of evaluating their children's special needs. This reflects the deep trust that parents place in healthcare providers to guide them in securing the necessary educational and developmental support for their children. Research indicates that parents believe their children are often misunderstood or misjudged during the educational evaluation process (Özalp et al., 2022). This suggests that families largely take action under the direction of medical doctors throughout the diagnosis and assessment period. Additionally, the less common referrals from special education and rehabilitation centers may indicate weaknesses in educators' ability to refer, as well as potential overlaps or uncertainties in referral pathways. This situation underscores the need for clearer communication and better integration of services to ensure a more structured and seamless transition from medical diagnosis to educational evaluation.

The appointment scheduling process at GRCs also varies significantly. Some parents are able to schedule appointments independently, either in person or by phone, while others rely heavily on special education and rehabilitation centers to make these arrangements. This reliance suggests that parents face difficulties in navigating the system on their own and highlights the critical support role that these centers play beyond therapeutic services. The inconsistencies in how appointments are scheduled-due to regional differences, procedural variations between centers, or differences in parents' confidence and capabilities-point to the need for a more standardized and accessible appointment system. Standardizing this process could help ensure equal and timely access to GRC services for all parents, regardless of their location or individual circumstances.

Regarding the reception and waiting experience at GRCs, the overwhelmingly positive feedback from parents indicates that these centers are generally successful in creating a welcoming environment. The lack of reported negative experiences related to wait times or staff interactions suggests that parents feel respected and valued during their visits, which is important for establishing trust between parents and the institutions serving their children. This positive reception experience significantly contributes to overall satisfaction with the services provided. Furthermore, similar research has found that reception and waiting experiences consistently receive high positive scores compared to other areas (Güven Ayvaz & Demir, 2022). However, further investigation is needed to determine whether these positive experiences are consistent across different GRCs and regions to ensure equity in service delivery.

The findings regarding the educational needs assessment process for children with special needs suggest that GRCs are generally successful in providing an appropriate environment for the evaluation of children with special needs, and most parents consider the assessment tools used to be adequate. The information gathered indicates that parents believe that an appropriate environment plays a critical role in effective assessment, as it directly impacts the child's comfort and performance during evaluation. Similarly, the need for the assessment process to align with the child's developmental level, as well as the important role that educators play in identifying children's strengths and areas for growth, is evident (Epstein et al., 2004; Öner, 2020). Additionally, the findings show that the assessment processes are designed and implemented to account for the individual differences of children. However, concerns raised by a small group of parents regarding the physical conditions of the assessment process suggest that, while the environment is generally adequate, there are still areas that could be improved, particularly in terms of accessibility and comfort. When examining studies related to assessment tools, the literature includes the work of Hallam et al. (2014), which highlights the discrepancies between the purpose of assessment tools and the interpretation of results and how these discrepancies can lead to misjudgments of children's abilities. In contrast, the research of Visser et al. (2012) emphasizes the importance of practitioners having sufficient knowledge about standardized developmental assessment tools for children with special needs. It is suggested that the lack of sufficient information regarding the tools used during the assessment could contribute to a lack of trust among parents. Thus, not only the selection of appropriate tools but also ensuring that parents are adequately informed and involved in the process emerges as important (Türkkal, 2018). Moreover, parents noted that the assessment processes do not sufficiently reflect their children's unique abilities, interests, and learning styles. These insights point to the necessity of expanding the diversity and scope of assessment tools. Diversifying these tools to be more sensitive to the individual differences of children enables educators to more accurately assess each child's development (Karaca & Tekmen, 2023). On the other hand, some parents expressed greater satisfaction with their communication with educators than with the assessment tools themselves, suggesting that while the tools are effective, there is a need for improvement in their application and the communication surrounding them (Melekoğlu et al., 2018).

The findings regarding the duration of the assessment process by educators for children with special needs show that many parents consider the time allocated to evaluate their child's performance to be insufficient. Similar to the literature, the critical importance of allocating enough time for individualized assessment approaches and determining the educational needs of children with special needs is emphasized, noting that shorter evaluation times can lead to misleading results in identifying these children's educational needs and potentially overlook their true potential (Leeber et al., 2012). Therefore, it is crucial that the assessment time is adjusted according to each child's needs and sufficient time is allocated. The experiences of parents during their children's assessments vary, with many parents having been present during the evaluations, which aligns with studies that emphasize the importance of parental involvement during the assessment process (Küçükgöz, 2020). However, some parents reported that their child was evaluated under less-than-ideal conditions, such as being under the influence of medication, which significantly affected the performance. In other words, the assessment process at the GRCs does not always take the full context of the child's performance into account, leading to evaluations that may not fully reflect the child's actual abilities (Küçükgöz, 2020). These findings highlight the importance of adopting more individualized and context-sensitive approaches in the assessment of children with special needs.

When examining parental feedback regarding the assessment results, some parents expressed satisfaction, but a significant number of parents voiced uncertainty about the accuracy of the recommendations, especially concerning placement in inclusive or special education settings. These concerns underscore the importance of not only accurate assessments but also fostering a sense of trust through principles of honesty, responsibility, and transparency during the assessment process (MEB, 2020). The dissatisfaction expressed by some parents suggests that GRCs need to review their assessment processes and work more closely with parents to address their concerns.

The interaction between parents and GRC personnel during the assessment process was generally positive, with many parents reporting meaningful conversations with staff about their child's assessment. This dialogue is important for parents to feel included in the assessment process and that their views were taken into account in the final evaluation. However, a small number of parents reported that their opinions were not valued, which undermined their trust in the process and the outcomes. This suggests that despite the GRCs' efforts to communicate effectively with parents, there are still areas for improvement to ensure that all parents feel heard and respected during their child's critical evaluation process.

The findings show that while most parents were satisfied with the reports they received from the GRCs, a few expressed dissatisfaction, which highlights potential inconsistencies in the assessment process. The satisfaction of the majority of parents suggests that GRCs are generally successful in producing reports that meet parental expectations. However, concerns raised by some parents, particularly regarding the accuracy and fairness of the reports, emphasize the need for GRCs to continually implement quality control and review processes to ensure that all assessments are conducted to the highest standards. These findings reflect the importance of transparency and consistency in the reporting process, as inconsistencies can lead to a loss of trust among parents (Yılmaz & Doğan, 2022).

Overwhelmingly positive feedback about GRC personnel suggests that these professionals are generally seen as competent and supportive by parents. The competency of staff is critical for establishing trust between parents and the institution and ensuring that the assessment process is smooth and effective (Paccaud et al., 2021). However, concerns raised about insufficient personnel in specialized areas such as physiotherapy suggest that there may be gaps in service delivery, which could affect the quality of the assessments. This emphasizes the need for GRCs to ensure that they have the necessary full staff in all required areas of expertise to meet the diverse needs of the children they assess (Yürekli & Şafak, 2022).

The findings indicate that most parents received their child's assessment report within a week to 10 days, which was generally seen as an acceptable timeframe. However, rare cases where report delivery took up to two months suggest that delays can occasionally occur, potentially affecting timely decision-making. Studies show that these delays are often correlated with the institution's workload (Karakaya & Özen, 2023). These findings point to the importance of maintaining efficient administrative processes to ensure that all reports are delivered on time (Nazlı et al., 2021).

Most parents preferred to collect their child's assessment report in person from the GRC, which suggests that parents take a proactive approach to their child's education and care. This active participation is crucial for ensuring that parents are informed and involved in the decision-making process (McNeilly et al., 2017; Maciver et al., 2019). However, the fact that some parents received the report through special education and rehabilitation centers indicates variability in how information is communicated to families. Ensuring that results are consistently and directly communicated to parents by the GRCs supports transparency and helps ensure that parents are fully informed about their child's progress.

Mixed reactions to placement recommendations reflect broader concerns about trust in the GRC assessment process. While many parents expressed positive views about the placement recommendations for their children, others felt that these decisions did not fully account for their child's unique needs or the expertise of other professionals at rehabilitation centers. This suggests that GRCs need to adopt a more collaborative approach, incorporating information from multiple sources to ensure that placement decisions are as accurate and beneficial as possible (Gürbüz & Bozgeyikli, 2014; Börkan et al., 2017; Yılmaz & Uçar, 2021). Negative experiences also suggest that parents need to be more involved in the placement decision-making process to foster confidence in the outcomes.

Overall positive feedback about the regular renewal of GRC reports shows that parents value the opportunity for ongoing assessment and adjustments to their child's educational plan as needed. Regularly updating these reports is seen as necessary for tracking progress and ensuring that interventions remain appropriate over time (Özak et al., 2008; Yaylacı & Güler, 2022). However, some parents questioned the necessity of frequent renewals, particularly for children with severe disabilities where significant change is not expected. This suggests that GRCs should adopt a more flexible approach, tailoring the frequency of assessments to each child's individual needs. Additionally, some parents' requests for more frequent assessments indicate a desire for closer monitoring, which could support more timely adjustments to educational plans.

Conclusion

This study reveals critical insights into the parental experiences with the GRC assessment process, emphasizing the necessity for more informed and active parental involvement, improved communication, and tailored assessment strategies. More information and guidance for parents, diversifying assessment tools, extending assessment periods, and strengthening parental involvement would allow children with special needs to be assessed more accurately and fairly and to benefit from educational services in the best possible way. These improvements will better meet the needs of parents and children and contribute to more positive outcomes in educational processes.

Recommendations

Based on a comprehensive analysis of the findings from this study, several recommendations emerge to improve the effectiveness and quality of assessment processes conducted at GRCs for individuals with special needs. First, there is a critical need to facilitate the referral process by establishing clearer communication channels between health professionals, educational institutions, and GRCs to ensure accurate and timely referrals. Second, continuous improvement of assessment tools and processes is essential, with a focus on providing comprehensive information to families and extending assessment periods to allow for comprehensive assessments. In addition, transparency and collaboration between GRC staff and families can be increased. Furthermore, GRCs should collaborate closely with educational institutions to ensure appropriate placement and support services for individuals with special needs, as well as set clear guidelines for regular review and renewal of assessment reports to meet changing needs. Finally, the implementation of quality assurance measures and feedback mechanisms can facilitate continuous improvement of service delivery and outcomes in GRCs. To address these needs, this paper recommends developing comprehensive guidelines for parental involvement, enhancing the diversity of assessment tools, and extending the duration of assessments. Implementing these recommendations can significantly improve the assessment process's effectiveness and inclusiveness.

As a first step for future research, longitudinal studies could be conducted to elucidate the long-term impact of assessment results on the education and general well-being of individuals with special needs. In addition, comparative studies between different GRCs with different participant groups and numbers of participants could be conducted. Finally, interdisciplinary collaborations between researchers, practitioners, and policymakers can facilitate the development and implementation of evidence-based interventions aimed at improving the effectiveness and inclusiveness of assessment services in GRCs.

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The first author contributed 40%, the second author 30%, and the third author 30%.

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Integrating "Talking Images" in Education: A Case Study

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Abstract
The era of innovation in education is well underway. Effective practices demonstrate the power of technology in motivating students and improving learning outcomes. This paper examines the integration of the talking image, a new and innovative technology, into the educational process through a case study. It also sets out the methodology and the educational benefits resulting from its use. This technology combines visual and auditory elements and is an effective tool for language education, suitable for students with learning difficulties. It can be applied in various educational contexts, from science and mathematics to art, and can enrich a simple narrative or provide personalized content. This paper is a significant contribution to the field, serving as a valuable resource for educators interested in integrating cutting-edge technologies into their pedagogical practices. New research in this direction should be done on the pedagogical use of talking pictures in education and the new frameworks for their integration.

Keywords: İnnovation, Talking images, Education, Multimedia, Didactic

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Introduction

It is undeniable that we are witnessing the peak of educational technology. As traditional tools such as slide projectors and interactive whiteboards are phased out, they are being replaced by more advanced digital alternatives. This shift signifies that educational technology is at its pinnacle. The question of whether technology can transform teaching is complex, but the answer is clear: it can. Teachers can implement innovative strategies and engage students in their everyday lives through the use of technology in the classroom (Matthias, 2015). However, this potential is only realized when technology is used creatively and imaginatively. It is important to note that technology is not a methodology in itself (Armstrong & Yetter-Vassot, 1994). Rather, it is a catalyst for introducing innovative pedagogical approaches (Armstrong & Yetter-Vassot, 1994). To prepare for this reality, future teachers must be trained in integrating technology and community resources into cultural integration and instruction if they are to be successful in their careers. Educators must gain proficiency in programs such as PowerPoint, Photoshop, iTunes, GarageBand, Audacity, iMovie, and Final Cut to develop a comprehensive skill set. With these skills, teachers can develop innovative classroom approaches and projects that facilitate the development of digital literacy among students (Matthias, 2015).

Multimedia tools have attracted considerable attention in educational settings due to their ability to transform traditional learning environments into interactive and inclusive learning environments. In recent years, multimedia technology has significantly improved the quality of education across institutional levels (Peconio, di Furia, Limone, & Fornasari, 2023). The integration of multimedia technology into professional training and learning outcomes has been proven to result in a positive correlation (Rahmawati & Ramadan, 2021; Wu, 2024). Educational processes today require a variety of multimedia technologies, including digital presentations, online resources, videos, audios, webinars, video conferencing, and e-learning platforms.

An illustrative example of this transformation is the use of talking images. These images combine visual and audio elements to provide dynamic educational content. Images can significantly influence perception. The way images are used and positioned strategically can have a profound impact on how we perceive a subject (Camillini, Barison, & Gigliotti, 2022). The incorporation of talking images into education marks a significant advance in technology. These images enhance multimodal learning and create a more engaging and richer learning environment by enriching and enhancing the multimodal learning process. These images combine visual content with audio explanations to meet the different needs and preferences of learners. They provide both visuals and audio explanations simultaneously.

Educational theories such as constructivism and cognitive load unequivocally support multimedia education. The constructivist approach supports that learners should construct knowledge actively, rather than receiving it passively. Multimedia, through its interactive and varied formats, enhances this active learning process (Mayer, 2014; Jonassen, 1991). Cognitive load theory also states that when information is presented visually and verbally as combination, the human brain processes it more efficiently. Managing intrinsic and extraneous cognitive loads is essential to maximize learning (Sweller et al., 2019; Plass, Moreno, & Brünken, 2010).

As a form of multimedia integration in education, this matches nicely with constructivist principles and also addresses concerns regarding cognitive load (here mediated because the student does not need to read) by allowing information to be presented through two channels — visual and auditory. In conclusion, it is vital to have this dual approach for an effective learning. The implementation of Artificial Intelligence (AI) in multimedia education could improve students' attention and motivation, impacting on the necessary cognitive processes for good learning according to studies. (Macedo et al. ,2023; Sweller et al., 2019).

To understand the integration of technology in education. TPACK (Technological Pedagogical Content Knowledge) model and SAMR (Substitution, Augmentation, Modification, and Redefinition) model should be examined.

The TPACK (Technological Pedagogical Content Knowledge) model The Technology Pedagogy and Content Knowledge (TPACK) model suggests the integration of three primary types of knowledge:

CK (Content Knowledge): In this case, it is language training or learning areas. Pedagogical Knowledge (PK): Concerning what the teacher knows about teaching and ways to help students learn most effectively. Technological Knowledge (TK): knowledge and use of technological tools, e.g., talking pictures to assist teaching. In the context of sound motion pictures, TPACK helps in understanding how technology can be systematically applied to integrate with the comprehensive process of teaching and learning going on at school as shown disgraphically below.

CK is short-hand for the value added being talking pictures, which illustrates how to apply abstract ideas in real-world contexts. Talking pictures are considered by PK as a multimodal learning media that can help teachers in the process of teaching and providing information visually with sound. How to (TK): This refers to the technical skills of a teacher who can create and edit talking pictures on tools like Adobe Animate, WondershareVirbo. TPACK, more directly through TCK-Technological Content Knowledge), reframes teachers thinking about how technology can affect the presentation of material. The talk pictures become content in more perfect and personalized style which is ideal to fulfil each students need.

The need for improvement the effectiveness of teaching developed TPACK model (Mishra & Koehler, 2006). It emphasizes the integration of technology with pedagogical and content knowledge. The effectiveness of TPACK is validated all the time, and its importance in teacher education and technology integration in the classroom is emphasized (Mishra & Koehler, 2006; Sofwan et al., 2023).
The SAMR model categorizes technology integration into four stages helping teachers understand the varying impacts of technology on learning, from simple substitutions to major instructional redesigns (Rakes et al., 2022). Furthermore, to improve educational outcomes, technology should contribute to pedagogy (Hamilton, Rosenberg, & Akcaoglu, 2016).
The SAMR model (Substitution, Augmentation, Modification and Redefinition) The SAMR model illustrates four stages of edtech integration community;
Substitution (technology replaces old tools, with no functional change) An example would be a talking picture instead of static text or image. Technology augments the learning by adding functionality. Text is matched with sound in talking pictures giving oral enforcement for improved reception. Revised: How Technology Revolutionizes the Delivery of Instruction Interactive talking pictures are easier to use because you can modify and adapt the content according to how an individual learner might like. if we were to redefine learning: technology creates new opportunities for types of learning and experiences that could not exist without it. This means that videos can be used to deliver targeted content and multimodal learning, which transforms the way learners engage with it. So, as a result from the discussion above in support and utilization of TPACK & SAMR models we have found how by talking pictures while enhancing instruction could be useful with interativity and personalization that may also introduce benchmark to talk which makes more sense when integrating technology inside teaching framework.
School culture and the effectiveness of teachers who make use of the TPACK model are indisputably key factors influencing technology integration in education (Khlaisang, Teo, & Huang, 2019; Lai, Wang, & Huang, 2021).
To integrate technology at different levels (Li et al., 2023), TPACK must be expanded to include the TPACK and SAMR models. Teachers' knowledge context (XK) must be included in the TPACK model.
The TPACK and SAMR models provide teachers with the tools they need to improve their teaching practices by effectively integrating technology. This will equip teachers with a comprehensive approach to understanding and implementing technology in the classroom. This is the way forward for technology integration in education.
TPACK can be divided into three broad categories: content knowledge, pedagogical knowledge, and technological knowledge (Li & Li, 2024; Mensah, F. S. & Ampadu, E. 2024). In addition to pedagogical content knowledge (PCK), technological content knowledge (TCK), and technological pedagogical knowledge (TPK), more specific forms of knowledge exist at the intersection of two categories. At the intersection of all three categories, you will find technological pedagogical content knowledge (TPACK). Furthermore, contextual knowledge encompasses information that does not fall into any of the three categories.

Talking Images in Educational Technology: Integration, Specifications, and Accessibility

Talking images is a technology that combines visual media, audio narration and/or text (subtitles). This combination makes use of technology and software. This paper highlights the importance of talking images in the current educational scene, presents the technical specifications, software tools and accessibility features.
Studies have shown the importance of audiovisual media in improving the learning process. Multimedia responds to the diverse learning styles of students who prefer interactive and multimedia content, especially after covid (Heemskerk, Volman, ten Dam, & Admiraal, 2011; Kemp & Grieve, 2014). Multimodal and multisensory stimulation, combined with audiovisual materials, is an effective way of understanding and clarifying concepts (Harter, 1978).
It is crucial to develop skills in using new technologies to effectively utilize audiovisual technology in education. This motivates students, leading to enhanced student performance (Nasab, Esmaeili, & Sarem, 2015).
Moreover, it is crucial that talking images remain accessible to all learners, including people with disabilities (Kuhl, 1992; Lave, 1988). Modern software for creating talking images enables the integration of subtitles, audio narration and interaction. This allows educators to create inclusive learning environment meeting the needs of students with diverse abilities (Ringstaff & Kelley, 2002; Parkes, Zaka, & Davis, 2011).

Technology Specifications

Talking images are based on digital image processing and audio synchronization. These media are activated when projections begin, with sound is integrated and synchronized with the talking image. The basic file formats are JPEG and PNG for images and MP3 or WAV for audio. This seamless integration ensures compatibility across platforms and devices (Gonzalez & Woods, 2018).

Audio files can be integrated into digital images in a simple way. Adobe Animate is the ultimate multimedia authoring tool. It allows you to develop rich multimedia content with ease. Integrating multimedia elements into educational content is simple with Articulate Storyline and Adobe Captivate (Clark & Mayer, 2016).

A learning management system (LMS) is undoubtedly enhanced by the addition of talking images. In schools, these elements can and should be integrated into lessons using an LMS (Moodle, Blackboard). In such a system (LMS), the multimedia content uploaded by teachers is guaranteed to be accessible and compliant with educational standards such as SCORM (Sharable Content Object Reference Model) and xAPI (Experience API). These standards allow for the tracking of student interactions and learning outcomes, which contributes to the overall student learning experience. (Skouradaki et al., 2013).

Captioning talking images is an effective learning tool for hearing-impaired students. It provides them with the information in text form, which helps them understand the auditory information. By adjusting the speed at which the sound is played, the size of the text and the color contrast of the talking images according to the individual needs of the pupils, we can show respect for the specificities of each pupil. This is a tool suitable for all age groups. Such a learning tool promotes inclusion and respects students with disabilities. (Mayer, 2020)

The benefits and challenges of using talking images in education

Talking images are an educational tool that can be used to meet a variety of learning needs and have many pedagogical benefits. Their integration into the classroom has both clear advantages and notable challenges, which must be understood to fully utilize their potential.

Expected advantages

Talking images align well with constructivist theories and cognitive load principles, which assert that combining text and images helps students understand concepts more effectively (Jonassen, 1991; Sweller, 1988). This dual-channel processing allows students to engage more deeply with the material. Technology like talking images motivates students to actively participate in the learning process while helping them maintain focus throughout lessons (Moreno & Mayer, 2007).

Support for students who are struggling

It is indisputable that talking images, which carry audiovisual information, are of great benefit to students with dyslexia or visual impairment. These tools offer alternative ways of interacting with learning materials, thereby enhancing comprehension (Rello et al., 2013).

Students can learn at their own pace, which makes learning more inclusive and promotes autonomy and personalized learning (Tomlinson, 2001). Multimedia makes students experience positive emotions during learning, which is associated with better learning outcomes (Moreno and Mayer, 2007).

Interactive Learning and Improved Outcomes

Creating interactive experiences that respect the individual needs of each learner shows the transformative potential of talking images, which make learning more accessible, enjoyable and effective (Mishra & Koehler, 2006).

Challenges and Constraints

Despite their potential, many schools face obstacles in implementing this technology. One major challenge is the lack of adequate infrastructure, as hardware requirements and software compatibility are significant obstacles (Ertmer, 1999). In addition, schools that have limited resources will face difficulties to keep the few expensive advanced talking image generating and presenting software in their supporting systems updated (Anderson, 2008). There are platforms that can do this, but they are quite expensive — even more so than the processes themselves.

Technological Infrastructure and Teacher Training

Mishra & Koehler (2006) intimate that teachers need to be trained in the use of talking images if they are to make effective use of them in classrooms, a scenario requiring both technical and pedagogical skills. Pedagogy as part of the skills needed in talking images (Jonassen, 1991). Teachers must receive continuous professional development to effectively integrate new technologies. Unfortunately, many educational institutions lack the necessary resources to provide ongoing training, due to limited time and financial resources (Johnson & Mayer, 2009).

Incorporating Diverse Learning Styles

However, in order to successfully insert talking images into classrooms, the many different ways students learn must be considered. Certainly, work to synthesize it with care and attention, because this is the hardest part of integrating the new content (Tomlinson, 2001). Breaking down these barriers will lead to the creation of more inclusive, engaging and effective learning environments so that all learners can learn better.

Method

Case Study: The Use of Talking Images during a Symposium

This case study explores the use of talking images during a symposium presentation held in Drama, Greece, on April 26-27, 2024, titled "Experiential Workshop: School of the Future: Which Teachers in Which School with Which Students for Which Society?" The target audience comprised educators from primary, secondary, and

tertiary education, alongside students, researchers, learners, citizens, and members of the broader educational and scientific community (19 individuals in total). This diverse audience provided a broad perspective on the effectiveness and potential of talking images in various educational settings.

Platform and Tools
The talking images were created using WondershareVirbo, a tool that has been well-known for its capability to integrate visual and audio elements to easily create dynamic educational material.

Design of the Presentation
Following a short presentation, a video with talking images was shown as a springboard for a discussion about innovation in the classrooms of the future. The video with talking images presented was the trigger for a discussion on innovation in school and the future of education. Afterwards, the presenters distributed a QR code printed on a pocket printer giving instructions to the participants on how to scan it. Next, the participants had to complete a questionnaire as to their impressions of the video presentation and the use of the talking images, and to record their thoughts and opinions.

Figure 1. QR Code video presentation

The video presentation aimed to highlight the potential of the new technologies and innovation in education and the classroom. The software used to create it was WondershareVirbo. This software combines visual content with audio explanations, having as optional the use of automatic subtitles. The content of the presentation aimed to show how this technology, of talking images, could improve the learning process.
This was followed by a discussion on good practices of their use and how they could be used effectively in the classroom. Participants' opinions converged on how this technology makes the learning process more engaging and interactive.
Feedback from the discussion will be used to improve the approach and explore more applications of talking images. This case study has shown that innovation in education is the key to the needs of the ever-evolving education community.

Figure 2. QR Code Questionnaire

Ethical Approval
No Ethnical Approval required. The study was conducted in accordance with ethical principles. No application requiring ethics committee approval was made.

Results and Discussion
Emotional Responses to the Presentation
A number of participants reported the emotional feelings they had watching these talking images in the symposium. Some of the emotions included feelings of excitement, as many participants stated that they were more eager about the innovation being shared through the presentation. Many of the participants also were just happy with everything overall especially how they combined what you saw and what you heard. Many more conveyed a desire to pursue the technology on some level and explore how talking images could be used in various educational contexts.

Another emotion that stood out in the meeting was impression, where participants' concentration leveled up and were engaged right into what ever kinds of content they were watching. Although, some people expressed their worries about it might result in over-dependency on technology and the influence appears on socialize, referring to the research results that put emphasis on a balance of learning with technology against human interaction (Jääskelä et al., 2017). Respondents also felt that the presentation was inspirational and encouraged them to think differently about traditional pedagogy.

Evaluation of presentation content

Participants were asked to rate the presentation content using a single word or phrase. The most common ratings were: "Useful," "Creative," and "I want to learn more." This suggests that participants found the presentation worthwhile and interesting, although there is room for improvement. These findings align with existing literature on multimedia learning, which emphasizes the importance of clear instructional design to maximize the effectiveness of audiovisual tools (Mayer, 2009).

Satisfaction with the presentation

The majority of participants were satisfied with the course, with most ratings on a scale of 4 and 5 (with 5 being excellent). This is paralleled with previous studies of multimedia tools in education on the integration of visual aids and interactive technology that benefited student engagement and satisfaction (Mayer & Moreno, 2003).

Usefulness of the Talking Images tool in the classroom

Talking Images was rated 4 or above (with a maximum score of 5) in the classroom-setting usefulness scale by the majority of participants. This study further supports the idea that talking images, as combinations of visual and audio stimuli are more effective in learning, possibly through engaging multiple senses simultaneously which is crucial for information retention as well as engagement (Paivio, 1991). The participants reported that this technology is an interesting way for not using traditional teaching strategies and incorporating a more dynamic and interactive learning environment (Clark & Mayer, 2016).

Usefulness in everyday life

Participants rated the usefulness of Talking Images in their daily lives, with most ratings in the 3 and 4 range. This indicates that even though the educational use of the technology is appreciated, its ability to transition into real life settings perhaps isn't of a high priority. Nevertheless, more recent work suggests that tools for audiovisual presentation may help in learning not only within classroom walls but also lifelong learning, that is to say better engagement with information in settings both academic and after-school (Kress & van Leeuwen, 2006).

Likelihood of integrating the technology in the future

Most participants considered it very likely that they would incorporate Talking Images technology into their courses in the future, with most ratings in the 4 and 5 range. There is an increasing adoption of technologies to embrace the needs of a new generation of learners who expects a more interactive and immersive education(link) with modern educational models which rely on innovation (Kong et al., 2014). The anticipated future integration is indicative that members perceive the benefits of using talking images for developing student-centered learning environments extending beyond merely a temporary solution.

Final impressions of the Presentation

Open-ended questions indicate that participants felt positive after the course, with comments such as 'excited', 'satisfied' and 'open'. Some expressed concerns about over-reliance on technology and the need for more training and support.

The use of Talking Images appears to be effective in increasing participant engagement and understanding. Participants were generally positive and found the experience useful and interesting. However, some challenges need to be addressed, such as the need for ongoing training and support to fully integrate this technology into education.

According to Hattie (2009), talking images affect students' engagement and retention by stimulating a positive emotional reaction. Previous studies (Mayer, 2009; Clark & Mayer, 2016) have also found that audiovisual media have a positive impact on learning. Educational technology can be utilized to enhance the effectiveness of teaching by using talking images. It is apparent from the positive reaction of students and their intention to incorporate technology into their future courses that talking images is an innovative and powerful teaching tool.

Learning content can be more engaging and easier to understand with talking images, which combine visual and auditory stimuli. Using visual and auditory stimuli together attracts and retains students' attention more effectively

than using text alone. In addition to reducing cognitive overload, speaking images make learning more enjoyable and effective by engaging both the visual and auditory channels. As a result, students become more motivated and engaged in class. A study by Moreno & Mayer (2007) demonstrates that students who use multimedia tools, such as talking images, report more positive emotions during instruction. These feelings directly influence motivation and learning outcomes. Students may be able to engage in content in a self-directed manner by using talking images that allow them to control their learning pace.

Talking images are the ideal tool for different student profiles, different learning needs and preferences. They are adaptable, and this is why. Text sizes, volume and language can be adjusted to suit students with disabilities, non-native speakers or those who prefer audiovisual learning. (Tomlinson, 2001).

Furthermore, the option to personalize content ensures students receive tailored learning, matching their knowledge and learning pace. They can dedicate more time to challenging concepts without feeling pressured.

Conclusion

Audiovisual media is an effective way to improve learning process (Mensah, & Ampadu, 2024). The integration of "talking images" is an attractive and motivating tool for different target audiences. Talking images evoke positive emotional responses in participants, such as excitement and curiosity.

The combination of audiovisual properties in talking images is the most effective way to meet a wide range of learning preferences and needs. Cognitive load theory proves that when visual and verbal information is presented simultaneously, the human brain processes information more efficiently (Sweller, 1988; 2023). Talking images are an effective tool for facilitating active knowledge construction and are part of the constructivist approach (Jonassen, 1991; Mayer, 2014). Our study clearly shows that participants want to incorporate talking images into their lessons. Mishra & Koehler (2006) are clear that effective teaching strategies must integrate technology, pedagogical knowledge, and content knowledge according to the Technological Pedagogical Content Knowledge (TPACK) framework to be effective. Teachers transform learning experiences through the Substitution, Augmentation, Modification, and Redefinition (SAMR) model.

Teachers must receive ongoing education, training, and support in innovative technologies in education to fully benefit the educational process and improve their teaching practices and student learning outcomes. (Johnson & Mayer, 2009; Ertmer, 1999). Talking images are a promising innovation in education, as they can significantly enhance teaching and learning. Multimedia tools will help educators create more engaging, inclusive, and effective learning environments. Future research must focus on the applications and impacts of talking images in educational settings, exploring how to use them.

Author (s) Contribution Rate

Eleni Mavropoulou contributed 20%, Marios Koutsoukos contributed 20%, Dimitrios Terzopoulos contributed 20%, Iosif Fragoulis contributed 20%, Andreas Oikonomou contributed 20%.

Ethical Approval

No Ethnical Approval required. The study was conducted in accordance with ethical principles. No application requiring ethics committee approval was made.

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Teacher Observation Skills Scale: Validity and Reliability

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Abstract
The present research aims to develop a valid and reliable instrument to measure teachers' observation skills. The research was conducted during the 2023-2024 academic year with 651 teachers. Data were collected through online survey methods. Expert opinion was consulted for the content and face validity of the scale in the research. Exploratory (EFA) and confirmatory factor (CFA) analyses were performed to assess the scale's construct validity. Based on the results, it was found that the scale had a structure consisting of two dimensions and 18 items. It was determined that the factor loadings of the items in the scale were between .70 and .93. Considering the relevant literature, it was decided to name these dimensions as "natural observation skill" (NOS) and "scientific observation skill" (SOS). The Cronbach Alpha for the scales were both .95. The research developed a valid and reliable scale that can determine the level of teachers' observation skills.

Keywords: Observation, Observation skill, Teacher, Scale development

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Introduction

Humans are natural observers of their surroundings to understand the world and shape their future actions (Merriam, 2009). In other words, observation is a part of daily life (Erden, 2011). Observation is often used to learn, acquire knowledge, collect data, evaluate, and communicate. Observation is a direct technique for obtaining information (Bahçeci, 2018). Observation has an important place in knowledge formation (Maral et al., 2012). Systematic observations during the formation of scientific knowledge are indispensable in testing and developing theories together with scientific inquiry processes (Yürümezoğlu & Öztaş Cin, 2019). Most research on people generally involves observation (Büyüköztürk et al., 2013). Observation is one of the most important data sources in qualitative research because it allows for first-hand access to data (Yıldırım & Şimşek, 2011). Observation is also a learning technique in lessons (Tok, 2023). The value of an activity or a product is also decided through observation (Karakütük et al., 1994; Poulson et al., 1996). How students communicate and interact with each other and with their teachers, and which positive and negative behaviors occur in the classroom, are also determined through observation (Erden, 2011).

The literature review reveals that observation is classified as routine/natural observations and systematic/scientific observations (Erden, 2011; Merriam, 2009; Yürümezoğlu & Öztaş Cin, 2019). Most observations in daily life are routine observations. These observations are made unconsciously and unsystematically to make sense of environmental events (Merriam, 2009), and their purpose is unclear (Erden, 2011). Natural observations are important in identifying the problem at the beginning of scientific research (Erden, 2011). Systematic/scientific observation refers to a structure covering scientific research processes that start with a scientific inquiry and continue with multiple inquiries. The data collection process in scientific observation has a methodological character (Yürümezoğlu, 2015). All of these classifications, as well as the use of observation in various fields, result in different definitions of observation.

Basic science process skills include observation, communication, classification, assessment, and prediction skills (Karamustafaoğlu, 2011; Ramig et al., 1995). The MoNE states that observation skills are among the most important skills to be gained by students, and all courses contain learning outcomes, including observation skills (MoNE, 2018). Both the 2005 and 2018 curricula emphasize the development of observation skills (Taze Karaçalı, 2021). Routine naturalistic observation skills help people connect with their surroundings, but they are not enough (Johnson, 2014). Individuals must improve their observation skills by learning about the methodological aspects of observation. This is possible by using sequential observation activities to systematize and scientificize children's natural spontaneous observation skills (Yürümezolu, 2015).

Observation is defined by Lederman (2007) as making sense of the world through the senses or extensions of the senses. Observation is a holistic process of receiving and processing data from the external environment, using not only the eyes but all sensory organs (Yürümezoğlu & Öztaş Cin, 2019). Observation is a method used to thoroughly describe the behavior that occurs in any environment or institution (Bailey, 1994; Yıldırım & Şimşek, 2011). Observation is defined as the process of gathering data for research by focusing on specific targets such as humans, society, or nature, either naked or with a tool (Büyüköztürk et al., 2013). Observation in education and training means the planned and purposeful examination of assets and events in their natural environment (Tok, 2014). Monitoring and examining the activity to be evaluated according to predetermined criteria is what observation in evaluation is all about (Karakütük et al., 1994). Although there are various definitions of observation in the Turkish Language Association's (TDK) dictionary, it has been observed that it includes all of the above definitions (TDK, 2023). Observation is at the basis of understanding nature and at the first step of scientific process skills (Yürümezoğlu & Öztaş Cin, 2019).

People's observation interpretations may also differ according to their observation skills. In other words, the interpretations of different people who observe the same thing may differ. The individual's knowledge, experiences, beliefs, and expectations influence his/her observations and interpretations (Chalmers, 2010). That is, the equipment used by individuals influences their observation skills and demonstrates that observation skills can be improved. Observation skill is a skill that can be developed through different activities (Cuthrell et al., 2016; Maral et al., 2012; Schwartz & Lederman, 2008). People can also learn to be careful and systematic observers by improving their observation skills (Merriam, 2009). Acquiring scientific knowledge and conducting activities on observation contribute significantly to the development of observation skills (Yürümezoğlu & Öztaş Cin, 2019).

Classroom observations have long been the undisputed foundation of teacher education programs in the United States. Pre-service teachers (PSTs) at various stages of development visit teachers' classrooms to complete

observation hours each semester (Cuthrell et al., 2016). Although observation has been used in educational research for a long time, it was heavily used as a data collection tool in various dimensions of the classroom environment in the 1950s and 1960s (Yıldırım & Şimşek, 2011). Similar research is being conducted in Türkiye as part of the Teaching Practice course. However, it was found that pre-service teachers in Türkiye have deficiencies in terms of observation (Cansız & Cansız, 2018; Karslı et al., 2010). Young and Bender Slack (2011) emphasize that pre-service teachers and teachers need to acquire observation skills and that these skills should be continuously improved.

The observation skill is the most important basic skill that affects the development of other science process skills as well as being the first step of these skills (Abruscato, 2000; Ramig et al., 1995; Yürümezoğlu & Öztaş Cin, 2019). Observation is not an innate skill (Young & Bender Slack, 2011). Observation skill is a skill that can be developed through different activities (Cuthrell et al., 2016; Maral et al., 2012; Schwartz & Lederman, 2008). This skill is used in many activities such as learning, acquiring information, studying, problem-solving, data collection, evaluation, etc. Furthermore, teachers' observation skills are critical for the positive realization of teaching (Young & Bender Slack, 2011). Using observation skills in learning and teaching environments at school and in daily life is extremely important (Ergin et al., 2005). Individuals with high levels of these skills can solve problems in their daily lives quickly and effectively (Smith & Scharman, 1999).

Individuals who do not use scientific process skills are unlikely to be successful in business life (Rillero, 2010). Teachers are responsible for designing learning experiences that allow students to gain the most from observation. Therefore, activities that improve students' observation skills must be included (Anagün & Yaşar, 2009). However, it is not known to what extent teachers have observation skills. The literature review revealed no measurement tool for teacher observation skills in international and national studies. The first study to be conducted in the development of observation skills is to reveal the observation skill level of individuals. Therefore, a valid and reliable instrument to measure teacher observation skills was developed in the present study. This scale is expected to contribute to eliminating the deficiency in the literature. Moreover, this scale is expected to mediate the use of observation skills in the social sciences. The present study is important in terms of showing that observation is more than just a data collection tool used in science.

Method

This research was conducted to develop a measurement tool to determine teachers' observation skill levels. The Teacher Observation Skills Scale was developed in this context. In this section, the study group and the procedure of the study were explained in detail.

Study Group

The study group consisted of 651 volunteer teachers working in different provinces of Türkiye, mostly (50%) in Kahramanmaraş province in the 2023-2024 academic year. Of the participants in the study, 347 (53%) were male and 304 (47%) were female. Participants work in kindergarten (5%), elementary school (30%), middle school (29%), high school (29%), science and art centers (5%) and special education institutions (2%). When the participants are analyzed in terms of years of service, it is observed that there are 84 (13%) participants with 0-5 years of seniority, 96 (15%) with 6-10 years of seniority, 220 (34%) with 11-20 years of seniority, and 250 (38%) with more than 20 years of seniority. The participants were 27 different branch teachers, including classroom teachers, religious culture and ethics teachers, Turkish teachers, mathematics teachers, and English teachers. Participants were randomly divided into two groups systematically in the study. The data of the first group (339 participants) were used for EFA, and the data of the second group (312 participants) were used for CFA and analyzed.

Procedure

The researcher who decides to develop a scale must first clearly define "what is to be measured." The theoretical structure of the variable to be measured and related variables must be revealed by reviewing the literature. The format of the measurement tool must be determined in the second stage, and an item pool must be created. This is followed by the submission of the items to the experts, piloting the designed scale, evaluating the items, and finalizing the scale (Şahin & Boztunç Öztürk, 2018).

If a new scale is to be developed, the first step is to conduct a literature review on the subject. This requires paying attention to whether there are similar scales in the literature and which questions/topics should be addressed for the scale (De Vellis, 2003). In this study, no valid and reliable scale to assess teachers' observation skills was found

in either national or international literature. Accordingly, it was decided to develop a scale to determine teachers' observation skills. The literature focuses on studies involving observation skills and related skills. The theoretical structure of observation skills was revealed.

Upon the decision to develop a scale, the format of the scale must be determined and an item/question pool must be created accordingly (De Vellis, 2003). According to the mathematical characteristics of the data, this format can be Thurstone type, Likert type, or Osgood dimensional separation scale (Tavşancıl, 2005). The scale form was prepared as a five-point Likert scale ranging from "(1) strongly disagree" to "(5) strongly agree" in this study. Another type of scale that is most commonly used in social studies and is based on the principle that participants provide information about themselves is the Likert-type scale. Participants state what the items in the Likert-type scale mean to them (Ekici et al., 2012). A pool of 55 items, which were designed to measure teachers' observation skills, was created by examining the literature thoroughly (Karamustafaoğlu, 2011; Ramig et al., 1995; Young & Bender Slack, 2011; Yürümezoğlu, 2015; Yürümezoğlu & Öztaş Cin, 2019). While designing the items, attention was paid to the fact that the items must be simple and comprehensible and that an item should not have more than one expression of judgment and thought (Ekici et al., 2012).

Expert opinions are obtained on how well the scale and each item in the scale serve the purpose (Karakoç & Dönmez, 2014). Experts can ask for corrections or deletions of items in the draft scale. However, the researcher should be responsible for accepting the suggestions (De Vellis, 2003). The items designed in this study were also reviewed by field experts in terms of scope, appropriateness, language, form, and comprehensibility. An expert evaluation form was then used to obtain the opinions of experts working in different university faculties of education (four in curriculum and instruction, two in assessment and evaluation, and one in educational administration) and researchers (two in science education) who have published on observation. Experts expressed their opinions on the form as "appropriate" or "must be corrected or removed." In line with expert opinions, eight of the items were removed, new items were added in their place, and some of the items were reorganized. The edited items were examined by a linguist, and needed arrangements were made. Content and face validity were thus ensured (Taşkın and Akat, 2010).

Revising the scale, developed based on expert opinions, by implementing it on a small number of participants who share similar characteristics to the target group. Piloting is important in terms of the readability of the items, revealing misunderstandings, and the completion time of the scale (Crocker & Algina, 1986). The pilot implementation of the scale prepared in this study was conducted with 35 teachers. The pilot implementation was analyzed and evaluated, and the instructions for the scale were prepared. It is adequate to select between 30 and 50 participants representing the target group for pilot implementation (Şeker & Gençdoğan, 2014). The 55-item draft scale, which was plotted, was filled in via Google Forms. The number of teachers who completed the form was 651. SPSS 22 package program for EFA and Mplus 5.1 package program for CFA were used for data analysis. The Cronbach's alpha internal consistency coefficient and split-half method were calculated to determine the reliability of the scale.

Ethical Approval

Ethical permission (Date: 26.08.2023-Number: 237539) was obtained from the Kahramanmaraş Sütçü İmam University Ethics Committee for this research.

Results and Discussion

EFA and CFA must be conducted in different samples (Orcan, 2018; Worthington & Whittaker, 2006). The participants were divided into two groups by using *ranbetween(1,2)* EXCEL formula. Based on the EXCEL grouping results, the data of the first group (339 participants) were used for EFA, and the data of the second group (312 participants) were used for CFA and analyzed. In factor analysis studies, it is recommended that all items on the scale have at least five times the number of participants and that the number of participants be at least 100 (Ferguson & Cox, 1993; Gorsuch, 1983).

Results Related to Explanatory Factor Analysis

SPSS was used for exploratory factor analysis (EFA). The principal axis factoring estimation method and promax rotation were used to run EFAs. In order to analyze the suitability of the EFA data obtained from the participants (339), the Kaiser-Meyer-Olkin (KMO) coefficient value was examined. Table 1 presents the data on KMO and Barlett's test.

Table 1. KMO and Bartlett's test.

KMO Measure of Sampling Adequacy.		.98
Bartlett's Test of Sphericity	Approx. Chi-Square	7017.38
	df	153
	Sig.	.00

The KMO value of .98 in Table 1 shows that the sample is perfect. The data obtained from Barlett's Sphericity Test (7017.38; $p < .001$) showed a multivariate normal distribution, indicating that the other assumptions for the EFA analysis were met. The fulfillment of these two assumptions shows that factor analysis can be performed. In order to determine the factor structure of the scale, Kaiser's criterion and the scree slope graph were examined. Data on the total variance explained according to the Kaiser criterion are presented in Table 2.

Table 2. Results for factor eigenvalues and explanation variances.

	Starting Eigenvalues			Total After Rotation		
Factor	Total	% Vary	Cum %	Total	% Vary	Cum %
1	12.36	68.68	68.68	12.12	67.33	67.33
2	1.47	8.17	76.85	1.23	6.83	74.16
3	.58	3.25	80.10			
4	.57	3.20	83.31			

According to the Kaiser criterion, factors with a loading value of 1 or higher are evaluated in factorization (Pallant, 2016). As a result of the EFA conducted by choosing principal axis factoring, two factors with eigenvalues above 1 were proposed. When the variance value of the first factor is analyzed, it is observed that it contributes 68.68%. The variance for the second factor was 8.17%. A Scree Plot graph was analyzed to decide the number of factors. Figure 2 depicts the Scree Plot graph.

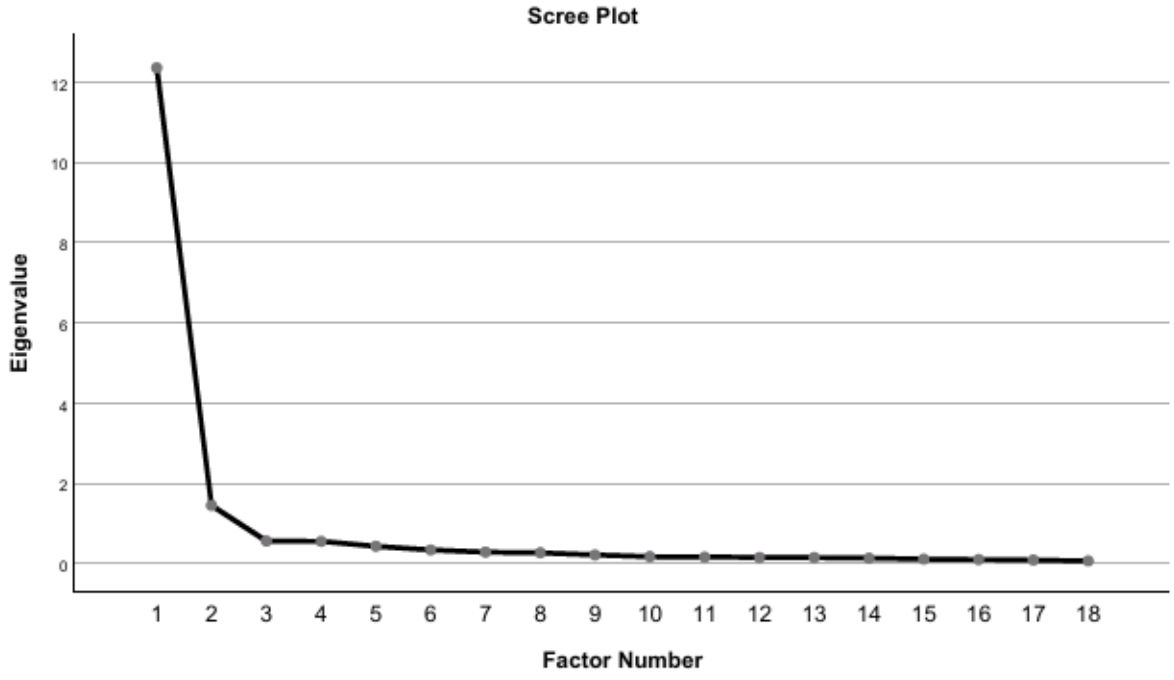

Figure 1. Scatter plot of teacher observation skill scale eigenvalues

When the graph in Figure 1 is examined, the slope plateaus at the third point, the contribution of the subsequent factors to the variance is quite small, and the values are numerically close to each other. When the total variance table and the slope graph are evaluated, the first two factors are accepted and the other factors are rejected.

Although there is no consensus among researchers in the literature, the acceptance points for factor loading values are .20 (Şencan, 2005). Based on the initial EFA results, some of the items (such as the items numbered 3, 19, and 40) were cross-loaded to multiple factors. After these items were removed, the EFA was conducted again. The factor loadings resulting from the final EFA are presented in Table 3.

Table 3. Results for factor loadings.

Item	Factor 1 (NOS)	Factor 2 (SOS)
S1	.83	
S2	.93	
S3	.89	
S4	.62	
S5	.87	
S6	.78	
S7	.80	
S8	.80	
S9	.69	
S10	.82	
S11	.70	
S12		.86
S13		.87
S14		.89
S15		.74
S16		.91
S17		.75
S18		.78

Table 3 shows that the Teacher Observation Skills Scale consists of two factors and 18 items. It is observed that the factor loadings of the scale items consisting of two dimensions are between .93 and .70. The EFA analysis revealed that the variance explained by the structure of the scale was 74.16%. Based on the EFA results, the correlation between extracted factors was .75.

Results related to Confirmatory Factor Structure

Mplus 5.1 program was used to run the CFA models. Confirmatory factor analysis was performed to confirm the construct validity of the 18-item two-factor scale formed by exploratory factor analysis. The first model tested showed some improvement gaps. Therefore, few error correlations were added to the model. Specifically, the correlations between item 2 and item 3, item 5 and item 11, and item 8 and item 9 were added. Figure 2 shows the modified model and standardized values of the model result.

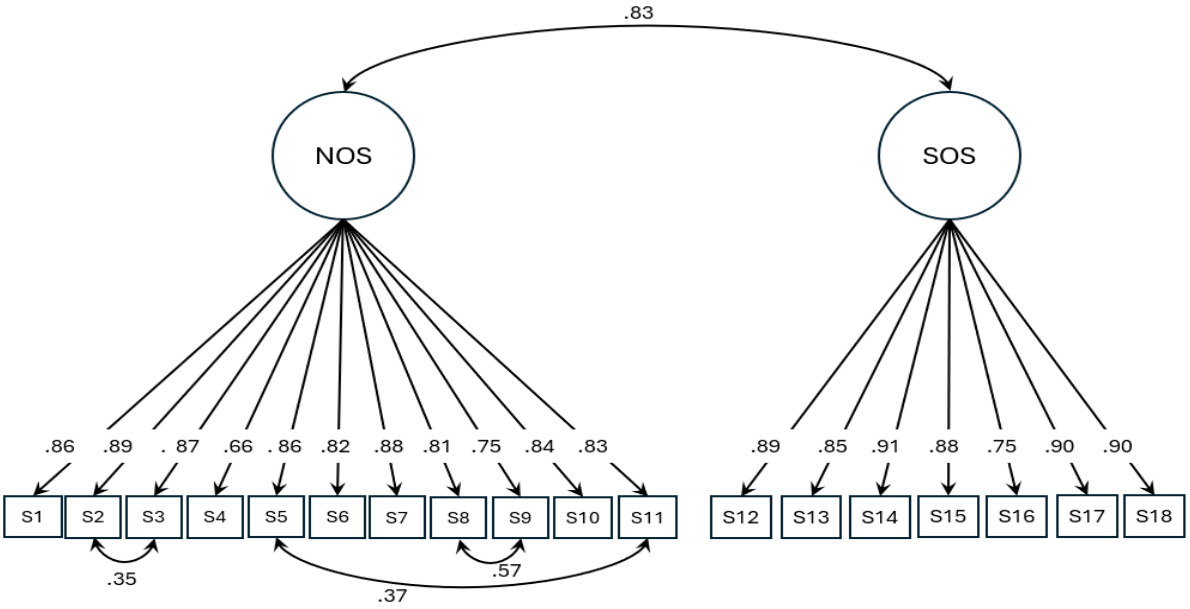

Figure 2. Standardized regression weights diagram

The boxes from S1 to S18 refer to the observed variables in the scale set, and NOS and SOS refer to the latent variables. The one-sided arrows in the figure indicate a one-way linear relationship. Standardized data for latent variables provide information about how well the latent variable is represented. The first latent factor, which was named Natural Observation Skill (NOS), was represented by 11 items. The values of standardized factor loadings ranged from .75 to .89. The second latent factor, which was named Scientific Observation Skill (SOS), was defined by 7 items. The values of standardized factor loadings for SOS ranged from .75 to .91. The standardized regression weight diagram shows that the observed variables that best represent NOS and SOS latent variables are S2 and S14, respectively. Results also show a correlation between NOS and SOS factors. The value of the correlations was .83. Table 4 provides information on the goodness of fit values.

Table 4. Teacher observation skills scale goodness of fit index.

Fit Indices	Acceptable Fit	Good Fit	Goodness of Fit Values	Conclusion
p*	$.05 < p \leq 1.00$	$.01 \leq p \leq .05$	.000	
x2/df	$2 \leq \chi 2/sd \leq 5$	$0 \leq \chi 2/sd < 2$	266.52/131=2.03	Acceptable
RMSEA	$.05 \leq RMSEA \leq .08$	$0 \leq RMSEA < .05$	.05	Acceptable
SRMR	$.05 \leq SRMR \leq .08$	$0 \leq SRMR < .05$	.03	Good Fit
CFI	$.95 \leq CFI < .97$	$.97 \leq CFI \leq 1.00$	.96	Acceptable

As it is not clearly defined which indices will be used in reporting the goodness of fit values, it is up to the researcher to decide which indices to use. When Table 4 is examined, the "p" value must not be significant. If this value is significant, other goodness of fit values are examined. While SRMR (.03) values showed good fit, x2/df (2.03), RMSEA (.05), and CFI (.96) values showed acceptable goodness of fit values. These results confirm the 18-item two-factor structure of the Teacher Observation Skills Scale.

Findings Related to Reliability

The reliability of the scale was evaluated with two different estimations. First, the Cronbach's alphas were estimated for both sub-dimensions. Later, the split-half reliabilities were calculated. The results were reported at table 5.

Table 5. The reliability results of the teacher observation skills scale.

	Number of Items	Cronbach's Alpha	Split-Half
Natural Observation Skill	11	.95	.94
Scientific Observation Skill	7	.95	.93

Table 5 shows that the Cronbach's alpha internal consistency coefficient of the scale is .94, which shows that it has an excellent reliability coefficient. Similarly, the split-half also shows high reliability values.

Conclusion

As a result of this study, a valid and reliable scale that can determine the level of teachers' observation skills was developed. While creating the TOSS, De Vellis' (2003) scale development stages and the practices in the literature were followed (İğde & Yakar, 2022; Şahin, & Boztunç Öztürk, 2018). A literature review was conducted, and the theories and concepts related to observation skills were examined. The format of the scale to be prepared was then decided, and an item pool was created. The draft scale items were submitted to expert opinions to ensure content and face validity. Adjustments were made to the item content, dimensions, and expressions in line with expert opinions. Following that, the pilot implementation of the devised scale was conducted, followed by an assessment of the item analysis, leading to the preparation of the ultimate version of the scale.

EFA and CFA were utilized to evaluate the construct validity of the TOSS. The EFA and CFA yielded a two-factor structure consisting of 18 items explaining 74.16% of the total variance. The fit indices of the single-factor structure of the TOSS were found to be sufficient. When 30% for the variance ratio explained in EFA and .30 lower limit for the factor loadings of the items in the scale are considered as criteria (Büyüköztürk, 2007; Costello & Osborne, 2005), as well as the fact that the fit indices calculated in CFA are within acceptable and good fit values, it can be said that the construct validity of the TOSS is ensured. Considering the relevant literature, it was decided to name these dimensions as "natural observation skill" (NOS) and "scientific observation skill" (SOS).

Reliability of the measurements obtained from the TOSS was evaluated using Cronbach's alpha method. Cronbach's alpha was found to be .95 for both dimensions in the scale. As a result of the research, a valid and reliable scale that can determine the level of teachers' observation skills was developed. Reliability coefficients of .70 and above are considered reliable in literature (Nunnaly & Bernstein, 1994; Tezbaşaran, 1997).

The items in the scale developed in this study are found to be compatible with the theories and concepts on observation skills as described in the literature. For instance, Aydoğdu's (2014) sentence "If you can notice a change around you on your way from home to school, it means that you are using your observation skills." is similar to the sentences in the scale developed. The characteristics related to observation skills in the studies in the literature (Arslan & Temiz, 2004; Harlen & Jelly, 1989) are as follows: "Determines the relevant details of the object and its surroundings." "Identifies significant differences/similarities between situations, events, and phenomena." "Groups events and objects by their common characteristics." "Determines the order of occurrence of events." is similar to the items in the scale developed in this study. The studies on observation skills in the literature also support the scale items obtained in this study (Abruscato, 2000; Aydoğdu, 2014; Chalmers, 2010; Cuthrell et al., 2016; Maral et al., 2012; Ramig et al., 1995; Young & Bender Slack, 2011; Yürümezoğlu, 2015; Yürümezoğlu & Öztaş Cin, 2019).

All people need to observe their surroundings to understand and explore the world around them (Ramig et al., 1995). Observation is one of the most important science process skills (Abruscato, 2000). Observation skills are the first step of scientific process skills and are the basis for other skills (Çepni & Çil, 2012). According to Akdeniz (2006), observation serves as the foundation for the acquisition of advanced skills such as prediction, communication, measurement, and classification. The essence of science is observation, and it is impossible to conduct scientific study without observation (Martin, 2003). Teachers should include activities that improve students' observation skills. Students' study skills are thus developed through observation (Anagün & Yaşar, 2009). Therefore, for teachers to develop students' observation skills, they first need to have observation skills themselves. A measurement tool is required to assess teachers' observation skills to determine whether they have this skill. The scale developed in this study serves this purpose.

Recommendations

The TOSS (Teachers' Observation Skills Scale) was created in this study to assess the levels of observation skills between teachers in kindergarten, primary, secondary, and high schools. Studies examining the relationship between teachers' observation skills and different skills (e.g., problem-solving, study, communication, categorization, etc.) can be conducted by using the TOSS.

The literature review revealed that no measurement tool could be used to measure teacher observation skills in international and national studies. This scale is expected to contribute to eliminating this deficiency in literature. The present research is also important in terms of showing that observation is more than just a data collection tool used in science. Observation is a measurable skill and is used in many areas such as learning, data collection, and evaluation in daily life. Therefore, it is required to determine the observation skills of individuals. The scale developed in the research can mediate the use and determination of observation skills in the social sciences. Researchers can use the developed scale to determine the level of observation skills in different studies. They can develop similar scales with reference to the scale.

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Appendix A: Turkish Version

Öğretmen Gözlem Becerileri Ölçeği

Madde No.	Boyutlar	Ölçek Maddeleri	Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum
1	Doğal Gözlem Becerisi	Okula gidip gelirken çevreyi incelerim.					
2		Okulun görünümünde bir değişiklik olunca hemen fark ederim.					
3		Çevremde olan bitenler hemen dikkatimi çeker.					
4		Arkadaşlarımla buluşunca her zaman kılık-kıyafetlerine dikkat ederim.					
5		Okul/sınıf içerisinde düzensizliğe sebep olan durumu hemen fark ederim.					
6		Bulunduğum ortamdan ayrıldıktan sonra dahi önce bulunduğum ortamı net bir şekilde betimleyebilirim.					
7		Yolda yürürken olağan dışı bir şey olmuşsa onu hemen fark ederim.					
8		İdare-öğretmen, öğretmen-öğretmen arasında bir sorun varsa onu anında fark ederim.					
9		Okuldaki öğretmenin yaşadığı herhangi bir sorunu hemen fark ederim.					
10		Okul/sınıf kurallarına uymayan öğrencilerin kim/ler olduğunu hemen fark ederim.					
11		Okul dışında da sınıfımdaki öğrencilerimi tanırım.					
12	Bilimsel Gözlem Becerisi	Gözlem sürecini planlarım.					
13		Bir olayı/olguyu uzun süre gözlemleyebilirim.					
14		Gözlem yaparken hangi sırayla gözlem yapacağımı belirlerim.					
15		Gözlem sırasında uymam gereken etik kurallarına uyarım.					
16		Gözlem verilerimi ayrıntılı bir şekilde yazarım.					
17		Gözlemlerimde elde ettiğim tutarsız verileri ayıklayabilirim.					
18		Gözlemlerimin her aşamasını titizlikle yaparım.					

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Evaluation of Units Established for Curriculum Support: A Collaborative Action Research

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Abstract

The curriculum includes educational activities that determine the struggle for survival and sustainability of a university's departments. Approaches that seek more flexible solutions and have a post-positivist understanding are needed to manage this system. One of these approaches is action research, first used by Kurt Lewin (1946) to solve social problems. In this study, four offices were established to make the curriculum at a state university in Turkey more Support office operations, collaboration, consultation, continuous improvement cycle, and problem identification (needs assessment). This research, which lasted for two years, has provided important services to participants in addressing current difficulties in office operations.

Keywords: Curriculum, Collaborative action research, Higher education, Instruction

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Introduction

Curriculum refers to a comprehensive system of objectives, content, instructional activities and materials, measurement, and assessment elements to be achieved through university courses and educational activities. Curriculum studies and improving the quality of education in universities in Turkey are carried out with 'accreditation studies'. Accreditation of higher education institutions is a relatively new concept in Turkey (Özçiçek and Karaca, 2019). Efforts are underway to determine the curriculum goals of each department and to align instruction to those goals. At the international level, many projects and research are being carried out to solve problems on the sustainability of curriculum applications at universities (Babatunde and Ekundayo, 2019; Junyent and de Ciurana, 2008; Patterson et al., 2010; Stevenson and Robottom, 2013). This article aims to engage the entire departmental learning community in collaboration and deliberation to improve the quality of education by supporting curriculum implementation. It also focuses on providing a new model through action research and conducting collaborative action research (CAR) to solve problems. It is believed that this model can improve the quality of teaching and learning in all universities.

According to Taba (1962), the main elements of an educational programme are the objectives, the content, the learning and teaching process, and evaluation. As Varış (1994) stated, an educational programme covers all activities to achieve the goals set for the audience an educational institution wants to educate. Similarly, the language education programme is transferred to classes in three ways: forward-central-backward for objectives (Common European Framework). These approaches are related to which element is placed at the centre of the practices. Forward design keeps the content element; central design incorporates the process dimension in more methods and techniques. Backward design is an approach to learning outcomes and objectives (Richards, 2013). Regardless of all approaches, practices differ in implementation and problems in language learning always remain (Gursoy & Bag, 2019; Akyıldız & Çelik, 2020). Action research and collaborative problem-solving approaches are needed to create deep solutions to these problems.

This study reflects the efforts of a community providing preparatory services in foreign languages at a newly established college to improve the quality of education and the functioning of the offices established for this purpose. To this end, the Curriculum, Materials Development, Testing and Assessment Unit, and Professional Development Unit have been established in the institution and the relevant procedures put in place. The main purpose of all the offices is to support the learning process and improve the quality of education to achieve the objectives of the curriculum. However, it became apparent that the staff service was not being used efficiently and similar repetitions were frequently occurring after a while. As this is not a positivist view aimed at proving something, it was decided to follow an action research model based on equal participation, investigation, and interpretation of the process. Action research is a process that develops practices on its own, and since this change is based on its self-developing nature (Feldman, 1996), it has the power to change the work of office units by improving them.

Furthermore, action research is based on the tendency to constantly think and evolve and provides "a more systematic, rigorous and collaborative means of doing so" (Stevenson and Robottom, 2013:472). Thus, each participant seeks to improve their applications in the unique context they work while simultaneously interrogating and rebuilding information about their applications. Teachers working in offices first need to improve their practices to improve unit operation, and they need this input.

Upon examining the literature based on action research that prioritizes CAR, its contribution, which improves the quality of education, was discussed in two different respects. The first one is based on cooperation between teachers; the other is research-based. While Farrel (2021) argued CAR is beneficial for developing institutions and teachers, Parkhouse et al. (2021) discuss the positive effects of cooperation on school systems and equal educational opportunities. Junyent and Geli de Ciurana (2008), Greedy (2016) and Leask (2008) stated CAR offers an opportunity to develop a curriculum and make it sustainable. Another group of researchers (Stevenson and Robbottom, 2013; Rock and Levin, 2002; Patterson et al., 2010) concluded CAR supports education quality, teacher development and sustainability. Many scientists benefit from their research-based contributions using CAR models in system functioning (Perry and Zuber-Skerritt, 1992; Cardno and Piggot-Irvine, 1996; Piggot-Irvine, 2002; Riel, 2019). The authors emphasize the success of the CAR model is changing and improving practice and thereby improving the quality of implementation of the work. Feldman (1996) and Platteel et al. (2010) discussed CAR's opportunity to develop teaching practices, whereas another group of researchers (Bleicher, 2014; Wang & Zhang, 2014) discussed CAR's contribution to support professional development and improve the quality of system functioning. concerns are successfully translated from theory to practice in offices (Mitchell et al., 2009; Levin & Rock, 2003; Rock & Levin, 2002), have allowed us to guide CAR in completing the problems and gaps in our business. Despite these contributions, no literature research or curriculum application model links the office system with action research to improve educational quality. Therefore, this study will contribute to the literature by providing an exemplary model for departments seeking to comprehensively study universities' educational quality or curriculum practices. Thus, based on CAR in the functioning of office unit systems based on elements

for curriculum life in our department that provides preparatory training for college students in language education, answers to the following questions are sought:

How is CAR's contribution to the functioning of offices supporting curriculum practices and its power to deal with challenges?

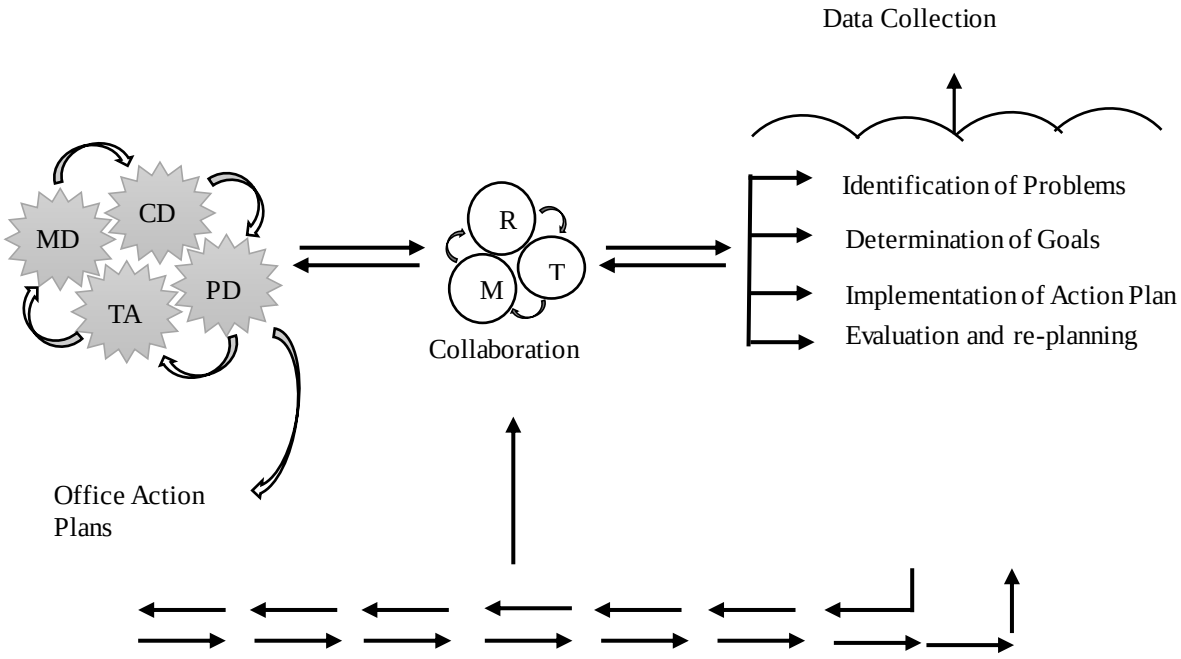
What is CAR? The benefits it provides to learning communities

The 'collaboration' within action research, which first started with the social psychologist Kurt Lewin (1946), emphasizes the movement in the social world (Dolapçıoğlu, 2019). Because action research provides information sharing through interaction, there is no direct flow of information. Willis and Edwards (2014) state the interaction in action research is caused by the social order and is the main feature of action research. Authors presenting CAR models (Perry and Zuber-Skerritt, 1992; Cardno and Piggot-Irvine, 1996; Piggot-Irvine, 2002; Riel, 2019) focused on these power models to change and improve practice. CAR represents a Renaissance in educational research (Oja and Pine, 1987), and it may be argued what sets it apart from other studies is that it brings together various stakeholders who undertake collaborative research and collaborate to understand a social process (Messiou, 2019). CAR, where managers and educators within the institution are included as primary participants, and the researcher invites both the primary participants from the inside and from outside, is a kind of action research focusing on solving the problems it is involved in through cooperation (Stevenson and Robbottom, 2013). According to Feldman and Weiss (2010), the meaning of the word 'collaborative' refers to the attitude of teachers helping each other with individual action research, rather than collaboration between teachers and us, university researchers, because action research happens when people explore their practices to improve them and better understand practice situations. It is action because they act within the systems they are trying to develop and understand; it is research because it is systematic, and the research results are explained to the participants (Feldman and Weiss 2010:31).

Participants gain knowledge by improving their professional development with their own and other members' experiences. Teachers' knowledge of their teaching and educational status improves when they cooperate with other teachers who question their practices (Feldman, 1996:514). With the efforts of all parties, the CAR project is a highly participatory, interactive, collaborative, and educational process for both teachers and university researchers (Wang and Zhang, 2014:235). In his study, Bleicher (2014:802) highlighted the impact of CAR on professional development and listed the components of CAR as follows: Motivation—teacher orientation and self-influence; knowledge—disciplines related to the interests of teachers and information about students; action—change in perceived teaching practice to improve student success; and reflection—the cornerstone of the entire learning process that provides teachers with the time and support to connect new experiences with teaching practices. Similarly, according to Larsen et al. (2017), human interaction is important in shaping institutions, and this is the most important opportunity CAR provides to institutions. In addition, CAR creates a meaningful and open network of connections between research, theory and practice and a network of relationships to be drawn on. CAR's value lies in the ongoing development of educators' ability to make educational decisions and their orientation to research as a resource for educational decision-making. Because of these benefits, teachers become more qualified and more connected with their profession (Mitchell et al., 2009:348). According to Bruce et al. (2011), collaborative partnerships help overcome obstacles such as a lack of research aspects (process validity). The second benefit of collaborative research is that the relationship between researchers and teachers strengthens the evaluation of teachers as researchers and researchers as learners. The third benefit of collaborative research is the ability of those involved to develop and test the theoretical frameworks of collaborative partnerships against live research. The university teacher educator should be actively involved in the problem identification process during this process (Rock and Levin, 2002). All these contributions are made through ongoing planning, action and revision cycles, as in any action research. CAR begins with identifying the problem and consists of planning, implementing the action, collecting and analysing evidence and reflection (Riel, 2019).

Method

The research adopted the CAR model to identify obstacles to these offices' applications and requirements and create solutions through cooperation and equal participation to solve the identified problems. CAR model effectively solves organizational problems by improving the managerial practices of individuals and includes three cycles, mainly planning, action and reflection (Perry and Zuber-Skerritt, 1992; Piggot-Irvine, 1996; Riel, 2019). The developed model, based on the creation of CAR action plans of office units organized according to the elements of the curriculum and their implementation, is presented in Figure 1.



* R (Researchers) * M (Managers) * T (Teachers), * MDO (Materials Development Office), * CDO (Curriculum Development Office), * TAO (Testing and Assessment Office), * PDU (Professional Development Unit)

Figure 1: Collaborative Action Research Model for Curriculum

The first office established was Curriculum Development Office (CDO), and then Testing and Assessment Office (TAO), Material Development Office (MDO) and Professional Development Unit (PDU) started to function respectively. The purpose of the CDO is to identify targeted services and prepare the weekly course schedule by considering the level of English and the qualifications students will need when they begin the course. In addition, this unit identifies the need for materials appropriate to the targeted objectives and communicates those needs to the MDO. In addition, the unit works in coordination with TAO and provides feedback on the scope of the exams to be prepared and the services to be measured. TAO İS is responsible for the preparation, implementation, and monitoring of the examinations and, in collaboration with the CDO, determines the content and scope of the measurement and evaluation instruments carried out during the year. The MDO was established within the established programme to create and develop materials for student learning needs. In addition, they share the materials developed each week to facilitate learning or practise with their instructors. All lecturers can contribute to this office by sharing their materials. PDU supports faculty professional development through curriculum application workshops to identify professional development needs.

The region where the study was conducted and the study group

There are six public and three foundation universities that are often preferred by students in the region where the study is conducted. Established in 2016, the university had only one prep class with 24 students in 2018. In the following year, with the increase of the university's departments providing education in English medium instruction, the number of students reached 380. In the 2019–2020 academic year, three more departments were opened. At the beginning of 2020–2021, training commenced with 18 staff and 490 students; the number of staff increased to 22 staff by the end of the academic year. Since the preparatory students get education with English medium instruction, they should understand academic subjects in a short period of eight months and gain the necessary language skills. Success in preparatory training is the basis of success in the department.

Data Collection Tools

Data were collected via minutes of departmental meetings and interviews. The development and problems that arose after each cycle were re-examined and initiated the new planning process.

● Meeting minutes: School of Foreign Languages meetings are held at least three times a year—at the beginning of the year, during the semester break and at the end of the year. In addition, meetings were sometimes held following the needs.
● Interview: A semi-structured interview form was conducted with teachers and managers. Members of each office, including managers, were interviewed, and focus group sessions were held. Questions were asked about the benefits of the units, changes in the system, the role of these units in supporting curriculum applications, problems encountered and the place of CAR in this sequence, and the situation of students and teachers using the office units. Interviews lasted an average of 45 minutes for each teacher and manager. Interviews were recorded and conducted face-to-face in the pre-pandemic period and then through the Microsoft Teams programme.

Data Analysis and Reliability

Content analysis was conducted using NVivo 12.
● Data were collected using three different methods and validity and reliability. Interrater agreement was 86%. In addition, each action plan was discussed after its implementation and progress were evaluated at the committee meetings.
● After each cycle, meeting minutes and interview records were evaluated. In particular, the PDU office reviewed teachers' video recordings, sent teachers evaluations on-course situations, and supported the curriculum's implementation by organising need-based training.
The evaluations were conducted by members of the office, two managers and researchers, and an external researcher, with experts from various fields coming together to make the evaluation committee's decisions. Committee meetings are the most important factor supporting the validity and reliability of action studies.

Ethical Approval
Ethical permission (date:08.01.2021, no:2021/08) was obtained from the Izmir Demokrasi University Ethics Committee for this research.

Findings

Important contributions of the office units have emerged as the collaboration and planning of the teaching staff, the preparation of the curriculum in advance and the guidance of the teaching process, ensuring continuous development and the need to identify problems to analyse the needs. Difficulties have been considered in the ongoing action plans. These are sudden changes, lack of clear definitions of office unit tasks, inter-office communication, ongoing current density, inability to keep the standard in the developed materials and insufficient feedback on office applications. The findings are presented in Figure 2.

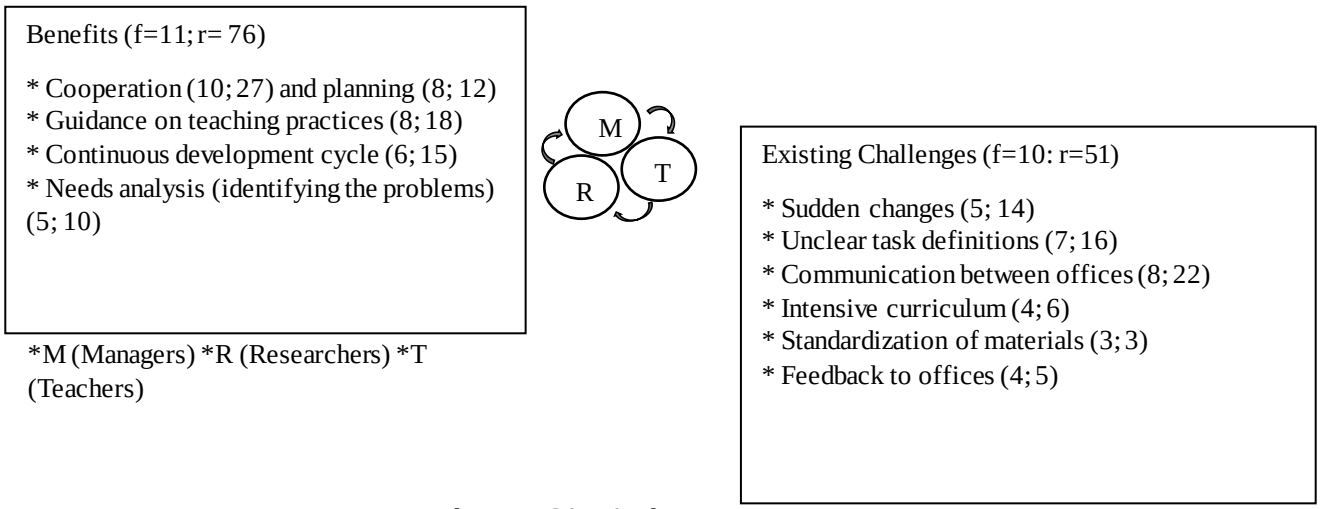


Figure 2: Findings on CAR Applications

The findings were gathered around two main themes: Challenges that arise during the operation of offices and the benefits of CAR in coping with these challenges

A. Benefits of CAR in coping with difficulties

All lecturers and office members have stated that CAR-oriented programme development office applications contribute to the planning of learning processes and directing the learning process by ensuring that teaching activities are carried out in cooperation:

The Curriculum Office was very helpful in planning before the semester began. They have a good team spirit; they work in a planned manner (individual interview, instructor).
We work well together in the office, so I feel very comfortable. We have good communication and collaboration. We support each other (CDO, focus group discussion).

The most important function of CAR is to identify problems and set goals. Participants indicated that this collaboration and planning guided classroom practices and made comparisons with the previous work system. Offices that implement action plans to achieve these goals guide instructional practices across all high school subject areas:

In the past, everyone was doing the same thing simultaneously, which reduced efficiency, so I felt like we were failing in most areas. We were working hard but getting nowhere… But now, every unit works in cooperation; offices are reserved; planning makes learning activities more useful (Individual Interview, teacher).

I shared my post-cycle analysis work with administrators and lecturers through interviews with teams, and I saw that their strongest point was the presence of their offices guiding their teaching practices (individual interview, researcher).

The objectives, content, learning-teaching processes (approach, strategy, method, technique, activity) and measurement and evaluation dimensions of an educational programme contain the fundamental elements for quality teaching. All of this is challenging work that requires collaboration and good planning. CAR has supported this difficult process and ensured continuous development in the institution:

...Indeed, I see a very important development, or rather progress, in learning activities. I think everyone is working selflessly (individual interview, teacher).

Our goal is to identify weaknesses, seek help from other offices, and evaluate ourselves and try to improve things every year. (CDO, focus group discussions).

The MDO worked with all units, especially the Programme Development Department, to assist in the selection of textbooks and the preparation and presentation of materials to teachers:

Our goal now, of course, is to prepare materials for our students to reinforce better the topics they have learned. Therefore, we are in close contact with the curriculum and testing departments because the curriculum tells us what to teach and the test tells us what to test. Therefore, we try to prepare material covering both sides (MDO, focus group meetings).

At least I know everyone is sincerely selfless and doing their best. The office of supplies works. I use the ingredients every week because I know what is being prepared. You know I want to use these materials with my students too and I try to do that (Individual interviews, teacher).

The purpose of the testing unit is to prepare exam questions and rubrics used in assessment to support curriculum development. The office staff has worked collaboratively to support teachers in assessing and evaluating instruction:

In this phase, we prepare and organize the questions and assist our other teachers in administering the exam. To this end, we work together to guide our teachers and help them or our students with the entire process before, during and after the exam (TAO, focus group meetings).

This unit, working especially with the Curriculum Office on communication between units, has contributed to the integrity of teaching:

There may be no problems, but their ideas should be considered in the studies, and I think testing and curriculum should be together at certain times (individual interviews, administrator).

The purpose of the PDU unit is to support the professional development of teachers. There have been no difficulties in the operation of the office. The main contribution of CAR is needs assessment. Since the PDU conducts its action research, a needs assessment was conducted to identify areas where teachers needed support. Teachers said that a training program tailored to their needs contributed to their professional development.

The PDU is still new, but it is an office, sorry, taster group. In this office, they make a serious effort to determine our needs, especially in the needs assessment process... (Individual interviews, teacher).

Based on the opinions, it can be said that CAR supports the professional development of teachers.

B. Monitoring the CAR in coping with challenges

The most important problem in office work is sudden changes. The pandemic may be the most important reason for these sudden changes. The other important factor is that the college is a newly opened institution. Therefore, they have to make new decisions. Change of administrators and hiring of new faculty members during two terms also resulted in losing the clarity of job description from time to time:
... we started and planned everything much earlier, but there were difficulties in doing so. Maybe it was because we could not meet in person because of the pandemic, but I think we have our system set up better than last year, so we are improving (face-to-face meetings, teachers).
.... we are constantly experiencing changes in preparing the program and for reasons beyond our control. It's a bit of a hassle, but the support of the program is due to these units. (CDO, Focus Group Discussions).
Regarding the lack of clarity of job descriptions**,**
Where does the curriculum end, where does the material begin, or how should it relate to the tests? Some things seem trivial. There is a need to clarify tasks and increase collaboration between units (CDO, Focus Group Discussions).
The teacher explained that MDO had three problems: not being able to standardize materials, not being able to get information about the usefulness of the material, and not being able to keep up with the intensive program-related work of the program office:
Meanwhile, there's a busy schedule going very fast. Secondly, we're going back to what we have talked about; we definitely need to cooperate with testing. We also need more information from teachers about the usefulness of materials (MDO, Focus group interview).
Regulations were made in office works based on CAR research results for the standard of material expressed by the teacher. The whole department uses some basic materials:
We have a listening event every week. We set the Thursday. Or we set the day and time for mock exams before the exams. If you are asking why we made the lists this way: At the end of last year, we sent students a questionnaire to evaluate the program, and the salient point was that the listening dates were fewer. This year we also found such a solution (one-to-one meetings, teachers).

Office members and managers noticed little feedback on office work. The main achievement of CAR in dealing with all these problems is to organize and strengthen the office system with cycles that support continuous improvement. In collaboration with researchers, administrators, and teachers, research findings are shared with units and action plans are created with emerging difficulties in mind. CAR led the process of creating action plans and identifying problems:
When the studies began to be based on collaborative research, it became confusing. Most importantly, sharing analyses with units provided change opportunities and new collaborative action plans. Specifically, for the distance education process, for clarifying their roles and simplifying the current program, the managers and faculty member made decisions about action plans in collaboration with the researcher (individual interview, researcher).
The second cycle begins with assessing the previous term's ongoing challenges. Who will do what this term, managers have been selected in each office for inter-office communication; job descriptions have been clarified. Thanks to these processes, the second term will go off without a hitch. Thanks to CAR, I was able to see how things were going. We saw that we needed to clarify job descriptions and renew action plans (Individual interview, Manager) and our continuous development was ensured.

Based on the opinions, it can be said that CAR significantly supports the teams in coping with the difficulties they encounter while carrying out curriculum-related activities.

Results and Discussion

This study concludes that a significant contribution of CAR (Collaborative Action Research) to office unit functions is the enhancement of teacher collaboration in curriculum application and the joint planning of learning activities. When educational researchers, university academics, and teachers work together to strengthen their abilities to identify and conceptualise problems, action research emerges (Pine, 1981). As Feldman (1996:513) stated, "...teachers' knowledge of teaching and their educational situation grows as they join with other teachers in examining their own practise. "In this context, we can express great support for the offices in the institution to work together and have a say in how business is conducted within the institution. Teachers are involved in every phase related to the functioning and structuring of the institution's identity acquisition process, and their collaboration may have facilitated its functioning. Salmon et al. (2021) found new learning opportunities emerge in teaching practices for university teachers when teaching becomes more democratic and collaborative. Mack (2012) stated many problems in the classroom can be solved by involving students in action research. This study made evaluations by frequently referring to student opinions during the action research process. Piggot-Irvine (2002), who also emphasized the importance of collaboration in action research, concluded the model provides experience-based practice via an in-depth exploration of problems in the system, applications, and evaluation of applications. Zuber-Skerritt (1992) emphasizes CAR participates more effectively in human resource development than traditional research, a model for management studies explained by developing.

Another finding of the study is that CAR drives instructional practice. Programme development is a very tedious and complex process. The lecturers in the office unit had to work extra overtime for this. 'Teaching is a job that requires many resources, including time. The roles of curriculum designer and evaluator were added to the role of teacher without changing the demands on teachers' time (Feldman & Weiss, 2010:42). Despite these challenges, teachers collaborated in the pedagogical activities and achieved development. While Farrel (2021) outlined the idea of developing a culture of thinking about collaboration in the individual, school or institution and concluded that this is positive for institutional and teacher development, Parkhouse et al (2021) discuss that some of the research projects have positive implications for schools and even school systems. Riel (2019) stated that collaboration allows for a deep understanding of participants to understand the complex process caused by social and environmental variables in action research, giving preference to collaborative work. In this study, CAR may have gained massive power in solving problems in application through the deeper understanding of knowledge gained by the participants.

Another finding that parallels this finding is that CAR provides for a continuous change in the functioning of office units. A group of researchers who have studied the topic (Stevenson and Robbottom, 2013; Rock and Levin, 2002; Patterson et al. 2010) concluded that CAR supports instructional quality, teacher development, and sustainability. Stevenson and Robottom (2013) examined three studies of environmental education and preferred the CAR method in their research, as in this study, because it incorporates both sustainability and systems thinking. As a result of their research, they concluded that "institutional support and capacity both help facilitate action research and are facilitated by its practise" (p. 478). Rock and Levin (2002) used the CAR contribution to their professional development through a method consisting of five common steps, as did the PDU office in this study. According to the author, the CAR process allows teacher candidates to better understand themselves as individuals while clarifying their ideas about teaching (pp. 13-14). Patterson et al. (2010), who researched sustainability, referenced the importance of feedback but asserted that the Look, Think, and Act cycles lead to sustainability in systems.

The challenges were examined in light of the capabilities of CAR. Given that it's a recently established institution, issues arising from the pandemic have led to problems associated with abrupt changes. In combating these difficulties, CAR has championed the strength of collaboration. Efforts spearheaded by specialists in action research and curriculum development have enabled participants to acquire knowledge and devise innovative action plans to tackle these issues. Junyent and Geli de Ciurana (2008) in their study emphasise the importance of developing a sustainable programme. Although they believe that there is a general desire for a more flexible curriculum, they also recognised that it is difficult to overcome the traditional fragmentation of disciplines based on the autonomy and management of university departments. In terms of programme development challenges, they said that "implementing interdisciplinary and flexible curricula is still a challenge" (p. 778). They suggested that one way to overcome these challenges is to negotiate consensus among the groups involved. Babatunde and Ekundayo (2019) noted that curricula use is met with resistance from staff, lack of accreditation standards, and high cost of application. According to our research findings, it was found that the training programme implemented was very intensive. Therefore, a reduction of the content was made. For this purpose, a questionnaire was first sent

to all lecturers asking them to write for what reasons the programme's content could be reduced. Nine faculty members completed the voluntary questionnaire. These responses were then forwarded to the Office of Programme Development, and they made a decision among themselves. After the final decision was made, administrators and researchers met to revisit these decisions. 'The applicability of curriculum innovations requires a great deal of effort, often focused on a few faculty members' (Junyent & Geli de Ciurana, 2008:779). The CDO also demonstrated this commitment.

Conclusion

This study underscores the pivotal role of Collaborative Action Research (CAR) in enhancing teacher collaboration, curriculum application, and pedagogical innovation in educational settings. It demonstrates that CAR not only facilitates instructional quality and sustainability but also drives significant change in institutional practices and teacher development through shared knowledge and cooperative effort.

Recommendations

While CAR has successfully improved collaboration within School of Foreign Languages, expanding this model to include inter-departmental collaboration could yield even greater benefits. Facilitating joint curriculum development and shared teaching resources across different departments can lead to a more interdisciplinary approach to education, preparing students for the increasingly complex and interconnected world.

This study is limited to the practices of action plan in a college which provides preparation education to its students. The future studies can be carried out in a variety of departments (e.g. education, medicine, etc.) to search the contribution of CAR on the practice of curriculum and CAR's power to deal with the challenges. On the other hand, the interviews include the participants' views on the practices. Because these statements may not reflect the participants' students or their perceptions truly, it is important to analyse them deeply through class observation. In addition, a study can be conducted to analyse the students' views regarding the process.

Lastly, the participants in this study were Turkish students and were studying English. However, more research can be conducted with participants learning another foreign language (e.g., French). In this way, researches which feature the contributions of action study and collaboration strategies in the practice of curriculum in higher education can be planned.

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Author (s) Contribution Rate

All authors contributed equally to the planning of the research, implementation of action plans, data analysis, and discussion sections.

Ethical Approval

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The Relationship of Cultural Intelligence and Global Citizenship Levels of Preservice Teachers in the Philippines

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Abstract
With the global developments, educational institutions play a vital role in fostering cultural intelligence and global citizenship among individuals, including preservice teachers. Despite the plethora of research on cultural intelligence and global citizenship in higher education abroad, little is known about these in the Philippines, let alone their correlation. In light of the globalizing world, the multicultural context of the Philippine society, and the internationalization of Philippine higher education, this investigation is timely and necessary to inform policymakers and teacher education institutions of the Philippine preservice teachers' preparedness to teach in multicultural and global settings. Employing a quantitative descriptive correlational design, this study investigated the relationship between cultural intelligence and global citizenship levels of 316 Philippine preservice teachers using the Cultural Intelligence and Global Citizenship Scales. The results revealed that while the preservice teachers' overall cultural intelligence, metacognitive, motivational, and behavioral cultural intelligence levels are high, their medium cognitive cultural intelligence level necessitates further development. Regarding global citizenship, they scored satisfactorily on global competence and global civic engagement dimensions, whereas they exhibit limited overall global citizenship attributes, particularly in social responsibility. Most ethnic groups they represented were also identified to have high cultural intelligence and average global citizenship levels. Additionally, the preservice teachers' specialization, year level, and overseas experience did not play significant roles in their cultural intelligence levels. Although the preservice teachers' specialization and overseas did not influence their global citizenship, the study found that their year level significantly affected their global citizenship levels. Overall, a positive correlation between cultural intelligence and global citizenship was identified. Aside from implications for strengthening internationalization strategies, such as increasing study abroad opportunities, enriching academic courses, and organizing more multicultural activities on campus, recommendations for further investigations were discussed.

Keywords: Cultural intelligence, Global citizenship, Philippine preservice teachers

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Introduction

Teachers are the primary agents in preparing students to be culturally intelligent and be global citizens in today's society, which is marked by increasing worldwide connectivity and interaction (Karataş & Arpaci, 2022; Kayışoğlu, 2016; McGaha & Linder, 2014; Sousa et al., 2023; Yüksel & Ereş, 2018). As educators, their role in promoting cultural intelligence and global citizenship is vital as they are responsible for implementing multicultural and global citizenship education by integrating global perspectives in their pedagogical strategies, content, and activities and instilling inclusive values such as respect for diversity and equality among their students. In order to have effective teachers who can cultivate cultural intelligence and global citizenship in students, teacher education institutions should give preservice teachers opportunities to improve their cultural intelligence and global citizenship competence (Karataş & Arpaci, 2022). This can be achieved by incorporating international dimensions in their goals and providing international experiences to their students and staff through pedagogical content, practices, and mobility (Kayışoğlu, 2016; Sousa et al., 2023; Thanosawan & Laws, 2013).

Global and national institutions also recognize the social significance of the two constructs of cultural intelligence and global citizenship. They are contained in the United Nations Sustainable Development Goals for quality education, which aim to ensure that all students gain the knowledge and abilities necessary to advance sustainable development through education for global citizenship and cultural diversity appreciation, among others (United Nations, n.d.). In the Philippines, this commitment was institutionalized through the 2016 implementation of the policy on the internationalization of higher education as specified in the Commission on Higher Education (CHED) Memorandum No. 55 (Commission on Higher Education, 2016). This entails incorporating global aspects into the Philippine higher education institutions' goals and trifocal functions to improve the country's quality of education and develop globally competitive human capital. Indeed, countries like the Philippines that produce teachers who find their way into different parts of the world must take these necessary steps to ensure they are competent to function in cross-cultural contexts and take their citizenship from the local onto the global realm.

Furthermore, while cultural intelligence and global citizenship address different concerns of social experience, both are highly relevant in navigating the globalizing conditions of the society at large. Several literatures claim that cultural intelligence and global citizenship are related. Karataş and Arpaci (2022) and Kaya (2022) argued that cultural intelligence and global citizenship are correlated because both concepts entail having respect and sensitivity to diversity and intercultural skills. Hence, accordingly, individuals with cultural intelligence can effortlessly become global citizens.

With this context, this present study is necessary and timely as it hopes to contribute to the literature on cultural intelligence and global citizenship and the relationship between the two constructs. It also aims to shed light on the Philippine preservice teachers' preparedness to teach in multicultural and international settings and inform future policies on multicultural and global education.

Cultural Intelligence

Cultural intelligence (CQ) was introduced by Earley and Ang (2003) as a new intelligence construct. It is defined as "the capability of an individual to function effectively in situations characterized by cultural diversity" (Ang & Van Dyne, 2008, p. 3) with metacognitive, cognitive, motivational, and behavioral dimensions (Ang et al., 2007; Earley & Ang, 2003; Van Dyne et al., 2008). Metacognitive CQ is the level of conscious cultural awareness a person displays during intercultural exchanges (Ang & Van Dyne, 2008; Yüksel, 2022). Cognitive CQ is the individual's culture-specific and culture-general knowledge in various settings acquired through education and experiences (Fang et al., 2018; Van Dyne et al., 2008; Yüksel, 2022). Motivational CQ shows the individual's effort in learning and adapting to intercultural encounters (Ang et al., 2007). Behavioral CQ reflects an individual's ability to adjust verbal and non-verbal behaviors when interacting with people from various cultural backgrounds (Sousa et al., 2023; Van Dyne et al., 2008; Yüksel, 2022). Individuals with high CQ are better able to engage and adapt to new situations and function effectively in the increasingly globalizing society because they have a broad range of skills to adjust their behaviors when confronted with unexpected ideas and behaviors (Bal, 2022; Ningrum, 2019; Yüksel, 2022).

Previous investigations in higher education settings, most of which employed a quantitative method, exposed the university students' varying CQ levels. For instance, Ang et al.'s (2006) quantitative study revealed that the business undergraduates in Singapore scored the highest in the metacognitive CQ while they obtained the lowest in the cognitive CQ. Moreover, Al-Jarrah (2016) reported that international students in Jordan had a high overall CQ level. Similarly, Mahasneh et al. (2019) also found that university students in Jordan had a high overall CQ level, with metacognitive CQ having the highest value and cognitive CQ having the lowest among the CQ

dimensions. This is supported by the mixed methods study by Barnatt et al. (2020), who revealed that while preservice teachers in the US are cognizant of cultural differences, they are less confident with their knowledge of other cultures. The quantitative study of Silvallana and Suppiah (2022) also demonstrated that public university students in the Philippines had the highest value for the metacognitive dimension while the lowest for the cognitive dimension. A recent confirmation of these results was provided by the quantitative study of Sousa et al. (2023) with engineering students at a Portuguese institution. However, in Senel's (2020) quantitative study in Turkey, the cognitive dimension was found to have higher values than the metacognitive dimension among foreign language students based on the high school where they graduated. Conversely, Bal's (2022) mixed methods research reported a high overall CQ level among language learners in Turkey who had the highest score in motivational CQ while lowest in the cognitive CQ among the CQ dimensions. While the investigations of Bal (2022) and Sousa et al. (2023) discussed above showed a high overall CQ level among their respondents, the quantitative study of Atan (2020) concluded that the preservice teachers in Turkey have an average CQ level.

Several quantitative studies were also conducted on the effects of demographic variables on students' CQ. For example, the quantitative study of Nel et al. (2015) in South Africa concluded that ethnic identity predicts students' metacognitive and cognitive CQ. Similarly, the quantitative investigation of Beneroso and Alosaimi (2020) with engineering students in the United Kingdom found ethnic identity to affect CQ significantly. While the findings on the effects of students' ethnic identity on their CQ are consistent, several investigations revealed contrasting results on the impacts of other variables, such as academic specialization, year level, and overseas experience, on the university students' CQ. To illustrate, Atan (2020) found that the students' academic specialization affected their CQ, as evidenced by the statistically higher CQ of the English Language preservice teachers compared to the Turkish Language preservice teachers. In contrast, Ningrum's (2019) quantitative study in Indonesia reported that specialization did not influence their Social Science and Science students' CQ levels. This result is congruent with the finding of Abo Elazm's (2021) quantitative study with preservice teachers in Egypt. Regarding year level, the quantitative study by Balli (2017) in Turkey reported a substantial variation in the university students' CQ by year level, as the first-year students had considerably lower CQ than those students in the higher levels. In another quantitative study in Turkey, Wujiabudula and Karatepe (2020) concluded that year level is not a determinant of preservice teachers' CQ. Regarding the impact of overseas experience on students' CQ, the study of Gökten and Emil (2019) in Turkey revealed that students who participated in the Erasmus Student Mobility Program had significantly higher CQ levels than those who did not. Likewise, the quasi-experimental study by Alexander et al. (2021) reported that students who participated in study abroad experience in New Zealand, Australia, or Japan had a substantial increase in their overall CQ compared to those who stayed on their campus in the US. Interestingly, in Turkey, Khodadady and Ghahari (2011) reported that students who traveled abroad had a significantly lower CQ than those who did not. In contrast, the quantitative study of Brancu et al. (2016) in Romania concluded that personal travels did not significantly contribute to improving students' CQ due to a lack of interaction during personal travels.

While cultural intelligence studies in the international community are abundant, it is noteworthy that as of the writing of this study, research is scarce on Philippine preservice teachers' CQ, given that the Philippines is a multicultural country and future teachers need to be prepared to work in culturally diverse learning environments (Ruales et al., 2020; Ruales et al., 2021). However, a search on related topics yielded some studies on Philippine preservice teachers' culturally responsive teaching and the impacts of international teaching internships. The descriptive correlational study of Caingcoy et al. (2022) reported that the preservice teachers in Bukidnon, Philippines, generally perceived themselves as competent in culturally responsive teaching and found that gender significantly impacted their culturally responsive teaching competence development, while their specialization did not. Some studies also showed the effectiveness of international teaching internships in enhancing the Philippine preservice teachers' multicultural competence. For example, the qualitative research of Añar et al. (2017) found that the preservice teachers from Bukidnon who participated in an international teaching practicum in Thailand were able to develop their multicultural understanding. Likewise, the qualitative study of Nurazizah et al. (2021) shared that the international teaching practicum experience of two Filipino preservice English teachers who participated in the SEA Teacher project in Indonesia and Thailand fostered the development of their intercultural communicative competence despite experiencing challenges of culture shock and language barriers.

The existing studies on the CQ levels of university students in other countries and the investigations on the impacts of students' demographic characteristics, such as specialization, year level, and overseas experience, on their CQ levels reveal conflicting results. Hence, further investigation is necessary, especially in the Philippines, where studies on cultural intelligence are lacking.

Global Citizenship

Due to global developments, the concept of citizenship has been recently called into question and was given a global attribute (Karataş & Arpaci, 2022; Karatekin & Taban, 2018; Temel, 2016; Thanosawan & Laws, 2013). While there is no consensus on a single definition of global citizenship, it is described as the sense of being identified with a larger and broader culture and community and humankind as a whole (Al-Ani, 2022; Anthony et al., 2014; Karataş & Arpaci, 2022; Kaya, 2022). Reysen and Katzarska-Miller (2013) characterized global citizenship as knowledge, compassion, and acceptance of diverse cultures while advocating social justice, long-term sustainability, and a sense of duty to act. Aside from having prosocial values, global citizens possess the ability to deal with uncertainties and skills in critical thinking, moral reasoning, intercultural communication, cooperation, and conflict resolution (Massaro, 2022; Reysen & Katzarska-Miller, 2013; Yüksel & Eres, 2018).

Morais and Ogden (2011) conceptualized global citizenship as a multifaceted construct with dimensions of social responsibility, global awareness, and global civic engagement. Social responsibility refers to the perception of one's degree of interdependence and care for others, society, and the planet (Morais & Ogden, 2011; Yüksel, 2022; Yüksel & Ereş, 2018). Global competence means having a flexible perspective while proactively striving to learn about others' customs and standards and utilizing this to interact with one another to function effectively in any context (Morais & Ogden, 2011; Yüksel, 2022; Yüksel & Ereş, 2018). Global civic engagement is defined as identifying problems from local, state, and national to global and acting on these issues through volunteering, political activism, and involvement in the community (Morais & Ogden, 2011; Yüksel, 2022; Yüksel & Ereş, 2018).

Like in CQ, several studies have investigated university students' global citizenship levels and reported conflicting results. McGaha and Linder (2014), who utilized the Global-Mindedness Scale, found that the teacher candidates in the US were moderately globally minded. The quantitative study of Temel (2016) also concluded that university students in Turkey who joined a youth leadership meeting had a medium global citizenship level. Similarly, the quantitative study of Karatekin and Taban (2018) found that both Polish and Turkish Erasmus students in several universities in Poland scored the highest in social responsibility and lowest in global civic engagement. On the contrary, Lo et al. (2016) reported that the global competence dimension had the highest value while social responsibility had the lowest value among Hong Kong university students. However, recently, the quantitative investigation of Ulukaya Öteleş (2023) found that Social Studies preservice teachers in Turkey had the highest score in global civic engagement but lowest in the social responsibility dimension. While the investigations of Karatekin and Taban (2018) and Ulukaya Öteleş (2023) reported an average global citizenship level among their respondents, the quantitative study of Abo Elazm (2021), which utilized a self-constructed global citizenship instrument, revealed a high global citizenship level among the preservice teachers in Egypt. The latest quantitative study by Alshawi (2023) also reported that university students in Qatar had a favorable rating of their global citizenship traits.

Similarly, prior investigations on the impacts of students' demographic variables, such as ethnicity, specialization, year level, and overseas experience, on their global citizenship showed inconsistent findings. For instance, the quantitative study of Jacobsen and Linkow (2012) found gaps in civic and political engagement based on race and ethnic identity in the US, with White young adults being the most engaged, followed by Black, while Hispanic young adults being the least engaged. On the contrary, McGaha and Linder (2014) concluded that ethnic identity did not influence the global-mindedness level of preservice teachers in the US. Regarding specialization, Abo Elazm (2021) revealed that preservice teachers' academic specialization did not affect their global citizenship. On the other hand, the quantitative study of Anthony et al. (2014) in the US showed that the global citizenship of university students from different majors significantly varied according to their majors. Concerning year level, Bulut's (2019) quantitative study in Turkey found that preservice teachers' year level had no substantial impact on their global citizenship level despite the increase in global citizenship scores as the year level increases. This finding is refuted by Ulukaya Öteleş (2023), who found that the global citizenship levels of Social Studies preservice teachers in Turkey considerably varied according to their year level. Finally, focusing on the impacts of students' overseas experience on their global citizenship, Karatekin and Taban (2018) concluded that the Turkish students' Erasmus educational experience in Poland significantly affected their global citizenship. In relation, the mixed methods study by Chen (2010) exposed that the Chinese students who studied at a university in the UK perceived their study abroad experience to have developed their critical thinking, global knowledge, cultural awareness, sense of identity, and self-esteem. Similarly, the quantitative study by Wynveen et al. (2012) in the US revealed that university students regarded their study abroad experience to have fostered their awareness and responsibility regarding environmental problems. On the contrary, the quantitative study by Kishino and

Takahashi (2019) with university students in the US found no statistical difference in the global citizenship of those who went abroad to study and those who did not.

Despite numerous studies on global citizenship in higher education abroad and several years of implementation of the internationalization of Philippine higher education to prepare Filipino graduates to be globally competitive, studies conducted on the Philippine preservice teachers' global citizenship seem uncommon. Nevertheless, exploring related topics showed studies on Philippine preservice teachers' 21st-century skills, including the impacts of international teaching practicums and local service-learning on their global competence and civic engagement. Focusing on 21st-century skills, the quantitative study of Mugot and Sumbalan (2019) revealed that only a few of the preservice teachers in Bukidnon, Philippines, use local and global connection strategies in their teaching practice due to a lack of knowledge of international and current trends and issues and difficulty in making global connections. In contrast, Somosot's (2020) quantitative study learned that preservice teachers in Davao del Norte, Philippines, rated their demonstration of global and local connections very high. Moreover, in another qualitative study, Tique (2023) suggested that the professional experiences and challenges encountered by the preservice teachers from Baguio City during their international teaching internships in Thailand will help them hone themselves to become global teachers. Finally, aside from international internship, the qualitative study by Adarlo (2020) concluded that local service learning is also helpful in fostering civic engagement and in teaching students about global citizenship, as exemplified by the involvement of eight Early Childhood Education preservice teachers from Manila in a literacy campaign, which enabled them to foster their civic identity, gain a sense of agency to contribute to society and transform their perspectives.

The same with CQ, available studies conducted abroad on university students' global citizenship and the impacts of students' demographic traits, such as ethnic identity, specialization, year level, and overseas experience, on their global citizenship show different results. These contradicting findings justify the need for more investigations, especially in countries where research on global citizenship is scarce, like the Philippines.

Cultural Intelligence and Global Citizenship

Few studies, all of which employed quantitative method, have investigated the relationship between cultural intelligence and global citizenship. In Egypt, the study of Abo Elazm (2021) concluded that preservice teachers' cultural intelligence and global citizenship levels are positively correlated. Likewise, in Turkey, a positive relationship between the preservice teachers' cultural intelligence and global citizenship levels was reported by Kaya (2022). In another study with preservice teachers in Turkey, Karataş and Arpaci (2022) found that cultural intelligence has a significant direct impact on global citizenship and concluded that cultural intelligence has a mediating role between social responsibility and global citizenship. These findings are further confirmed by the study with in-service teachers in Turkey by Yüksel and Ereş (2018), who also had the same finding, albeit a low positive relationship.

With the increasing relevance of CQ and global citizenship, it is believed that these concepts will be valuable in the Philippines, especially since it is a multicultural country with 110 indigenous ethnolinguistic groups, of which thirty-three percent (33%) are concentrated in Northern Luzon, particularly in the Cordillera Administrative Region (CAR, United Nations Development Program, 2013). Philippine education reflects this diversity, especially in classrooms (Paras, 2020). Given these contexts, the Philippine government continuously upgrades the curriculum to prepare the students to be academically and culturally competitive in local and global actions (Paras, 2020). This is evident in the Department of Education Order 21 series of 2019, which integrates 21st-century skills in the Philippine K to 12 curriculum (Department of Education, 2019). Furthermore, in keeping with the direction of internationalizing tertiary education under CHED Memo No. 55 series of 2016, the standard program outcomes for teacher education programs, as stipulated in the Commission on Higher Education Memorandum Orders 74, 75, 77, and 80 in 2017, require preservice teachers to attain competencies relevant to multicultural teaching and sustainable education (Commission on Higher Education, 2017a; 2017b; 2017c; 2017d). Additionally, based on the DepEd Order No. 42 series of 2017 on the Philippine Professional Standards for Teachers (PPST), professional teachers should have knowledge, understanding, and respect for students' diversity and employ various teaching strategies to nurture their students to be successful citizens of the evolving local and global community (Department of Education, 2017). Moreover, many young Filipino teachers are exploring overseas teaching opportunities nowadays (Arcillo, 2023). Based on the latest available data from the Philippine Overseas Employment Administration (2017), there were 1,328 Filipino teachers deployed in various countries in 2017, which is rising annually (Alicamen & Becamon, 2022).

While research on CQ and global citizenship in higher education has already been developed abroad, little is known about it in the Philippine context. As of the writing of this research paper, it appears that hardly any study has

investigated the correlation between the Philippine preservice teachers' CQ and global citizenship levels, even though it has already been eight years since the internationalization of higher education.

Research Objectives

The present study sought to determine the relationship between preservice teachers' CQ and global citizenship levels. Given this, the study specifically aimed to:

1. measure and compare the overall CQ and global citizenship levels of the preservice teachers;
2. gauge the CQ and global citizenship levels of the preservice teachers according to ethnic identity;
3. determine whether there are any differences in CQ and global citizenship levels based on specialization, year level, and overseas experience; and,
4. identify the relationship between CQ and global citizenship.

Method

Research Design and Materials

A quantitative descriptive correlational study was conducted to identify the relationship between the CQ and global citizenship levels of preservice teachers at a private university in Baguio City, an educational center in the northern Philippines. The Cultural Intelligence Scale (CQS), developed by Ang and colleagues (2007), was utilized to measure the cultural intelligence levels of the preservice teachers. This 20-item instrument is composed of four items for the metacognitive dimension (items 1 to 4), six items for the cognitive dimension (items 5 to 10), and five items each for both motivational (items 11 to 15) and behavioral dimensions (items 16 to 20). The items were rated based on a 7-point Likert scale from strongly disagree (1) to strongly agree (7). Meanwhile, the Global Citizenship Scale (GCS) by Morais and Ogden (2011) was employed to gauge the global citizenship levels of preservice teachers. The GCS has a total of 30 items, with six items for social responsibility (items 1 to 6), nine items for global competence (items 7 to 15), and fifteen items for global civic engagement (items 16 to 30). It has a 5-point Likert scale rating from strongly disagree (1) to strongly agree (5). The authors of the Cultural Intelligence and Global Citizenship Scales granted permission to use both scales for this study.

The survey tool was formatted as a Google Form. The initial section of the Google Form included questions on demographic data such as ethnic identity, specialization, year level, and overseas experience. To clarify one of the variables, ethnic identity, according to Trimble and Dickson (2005), is a concept that entails affiliation by individuals to a specific ethnic group to which they perceive themselves to belong. The succeeding sections contained the 20-item Cultural Intelligence Scale (CQS) and the 30-item Global Citizenship Scale (GCS).

Research Procedure and Ethics

The survey was administered after obtaining clearance from the university's ethics review board and the relevant offices. The ethics committee approval certificate (Date: 04.03.2024- Number: SLU-REC 2024-073) was obtained from Saint Louis University, Baguio City, Philippines. The year-level coordinators were requested to share the Google Form link with their student chat groups. An informed consent form was included in the survey link to ensure that the respondents were provided with necessary information about the nature and purpose of the study. There were no risks to the respondents voluntarily participating in the survey, and data privacy and confidentiality were upheld. The researchers declare no conflict of interest in the study's conduct.

Respondents

The study's respondents were the preservice teachers at a private university in Baguio City, Philippines. Specifically, the study included undergraduate preservice teachers enrolled in the said private university during the second semester of the academic year 2023-2024. However, students taking double majors, such as Certificate in Teaching (CIT), and graduates awaiting the teacher licensure examination were excluded as research respondents. Moreover, the lone representative of BSED Filipino was excluded due to underrepresentation. To gather the data, the study employed a complete enumeration of 364 undergraduate preservice teachers enrolled at the private university during the second semester of the academic year 2023-2024. A total of 316 preservice teachers responded to the online survey.

Table 1 displays the preservice teachers' demographic profile. More of the preservice teachers identified themselves as belonging to the cultural groups in the northern Philippines, which are Ilocano (29.43%), Igorot (18.99%), Tagalog (15.82%), Pangasinan (11.08%), Kankanaey (8.23%), and Ibaloi (5.06%). Also included are international students, with one Russian, one Vietnamese, and three Chinese. Regarding specialization and year level, most respondents specialized in BSED English (58.23%) and were in the third-year level (33.20%). Finally, respondents with overseas experience (19.30%) were outnumbered by those who did not have any (80.70%).

Table 1. Demographic Profile of the Preservice Teacher Respondents (n=316)

Variable	Level	Count	Percentage
Ethnic Identity	Bicolano	3	0.90%
	Bisaya	2	0.60%
	Chinese	3	0.90%
	Ibaloi	16	5.10%
	Igorot	60	19.0%
	Ilocano	93	29.40%
	Kalinga	2	0.60%
	Kankanaey	26	8.20%
	Kapampangan	9	2.80%
	Pangasinan	35	11.10%
	Tagalog	50	15.80%
	Zambal	3	0.90%
	Ethnic identities with one respondent each (Applai, Bag-o, Batangueña, Chinese-English, Chinese-Ilocano, Cordilleran, Half-Igorot/Half-Tagalog, Ibannag, Ifugao, Ilocano-Tagalog, Ilonggo, Moro, Russian, Vietnamese)	14	4.40%
Specialization	Bachelor of Elementary Education (BEED)	38	12.03%
	Bachelor of Physical Education (BPEd)	9	2.84%
	Bachelor of Secondary Education major in English (BSED English)	184	58.23%
	Bachelor of Secondary Education major in Math (BSED Math)	8	2.53%
	Bachelor of Secondary Education major in Science (BSED Science)	11	3.48%
	Bachelor of Secondary Education major in Social Studies (BSED Social Studies)	45	14.24%
	Bachelor of Special Needs Education (BSNEd)	21	6.65%
Year Level	1st Year	57	18.00%
	2nd Year	59	18.70%
	3rd Year	105	33.20%
	4th Year	95	30.10%
Overseas Experience	Yes	61	19.30%
	No	255	80.70%

Data Analysis

Statistical analyses were performed using the Jamovi software. The reliability tests conducted on the Cultural Intelligence Scale (CQS) and Global Citizenship Scale (GCS) revealed that both scales were reliable, with reliability coefficient values of 0.901 and 0.888, respectively.

The weighted mean was used to compute the preservice teachers' CQ and global citizenship scores and their CQ and global citizenship scores according to ethnic identity. One-way ANOVA was used to determine the differences in CQ and global citizenship scores according to the respondents' academic specialization and year level. An independent samples T-test was employed to identify the level of differences in CQ and global citizenship scores based on the respondents' overseas experience. Finally, Pearson correlation analysis was done to identify the relationship between the preservice teachers' levels of CQ and global citizenship. The study used the 0.05 level of significance. The data gathered for CQ has a skewness value of -0.258 and a kurtosis value of 0.0732, while the collected data for global citizenship has skewness and kurtosis values of 0.459 and 1.48, respectively. These values indicate that the data collected for CQ and global citizenship are fairly symmetrical and normally distributed.

The following categories (Table 2) used in some studies (e.g., Bal, 2022; Mahasneh et al., 2019; Sousa et al., 2023) were adopted to interpret the preservice teachers' cultural intelligence scores. CQ scores between 1.00-2.99 were interpreted as "low-level CQ," while scores between 3.00-4.99 and 5.00-7.00 have been interpreted as "medium/moderate level CQ" and "high-level CQ," respectively.

Table 2. Cultural Intelligence Score Intervals and Interpretation

Score Intervals	Interpretation
5.00-7.00	High CQ
3.00-4.99	Medium/Moderate CQ
1.00-2.99	Low CQ

Meanwhile, the guide to interpreting the preservice teachers' global citizenship scores (Table 3) was adapted from the study of Karatekin and Taban (2018). Global citizenship scores between 1.00-1.80 were interpreted as Very Inadequate (VI), 1.81-2.60 as Inadequate (I), 2.61-3.40 Average (A), 3.41-4.20 as Satisfactory (S), and 4.21-5.00 as Very Satisfactory (VS).

Table 3. Global Citizenship Score Intervals and Interpretation

Score Intervals	Levels	Interpretation
4.21-5.00	Strongly Agree	Very Satisfactory (VS)
3.41-4.20	Agree	Satisfactory (S)
2.61-3.40	Neutral	Average (A)
1.81-2.60	Disagree	Inadequate (I)
1.00-1.80	Strongly Disagree	Very Inadequate (VI)

Results and Discussion

This section presents the study's findings and corresponding discussions based on the data collected.

Table 4. Preservice Teachers' Overall Cultural Intelligence Level

Dimensions	Overall CQ	
	Mean	Qualitative Interpretation
Metacognitive Dimension	5.90	High
Cognitive Dimension	4.75	Medium
Motivational Dimension	5.52	High
Behavioral Dimension	5.47	High
Overall	5.41	High

Table 4 shows the overall CQ level of preservice teachers. Accordingly, the preservice teachers scored the highest in the metacognitive dimension ($\bar{x}$=5.90), followed by the motivational ($\bar{x}$=5.52) and behavioral dimensions ($\bar{x}$=5.47), respectively, which suggest that they have a high CQ level in these dimensions. Conversely, the cognitive CQ ($\bar{x}$=4.75) is where they scored the lowest, which implies that they have a medium cognitive CQ level. Considering all four CQ domains, their overall CQ score ($\bar{x}$=5.41) indicates a high CQ level.

The preservice teachers' high metacognitive CQ level implies they are very conscious of their cultural knowledge and verify and adjust it when engaging in cross-cultural exchanges. The same finding is true for several studies (e.g., Al-Jarrah, 2016; Ang et al., 2006; Bal, 2022; Barnatt et al., 2020; Mahasneh et al., 2019; Silvallana & Suppiah, 2022; Sousa et al., 2023). Ang et al. (2011) and Yüksel (2022) claimed that individuals with high metacognitive CQ question, reflect and adjust their assumptions and mental models during intercultural exchanges.

Conversely, the preservice teachers' medium cognitive CQ level suggests they are slightly knowledgeable of other cultures' legal, economic, communication, belief and marriage systems, cultural values, and arts and crafts. Some studies (e.g., Ang et al., 2006; Bal, 2022; Barnatt et al., 2020; Beneroso & Alosaimi, 2020; Mahasneh et al., 2019; Silvallana & Suppiah, 2022; Sousa et al., 2023; Wujiabudula & Karatepe, 2020) also uncovered that their university student participants obtained the lowest score in the cognitive dimension.

Meanwhile, the preservice teachers' high motivational CQ level implies that they delight in interacting with individuals from different cultural backgrounds, living in unfamiliar cultures, and are highly confident in being successful in cross-cultural situations. Individuals with high cognitive CQ have higher self-efficacy and intrinsic motivation, which makes them more capable of learning and functioning in cross-cultural situations (Ang & Van Dyne, 2008; Ang et al., 2007; Ang et al., 2011; Sousa et al., 2023; Van Dyne et al., 2008; Wujiabudula & Karatepe, 2020; Yüksel, 2022)

Moreover, the preservice teachers' high behavioral CQ level indicates they are highly skillful in adapting their verbal and non-verbal behaviors to fit their actions in cross-cultural situations. This finding agrees with other studies (e.g., Bal, 2022; Mahasneh et al., 2019; Sousa et al., 2023; Wujiabudula & Karatepe, 2020). Some literature (e.g., Ang & Van Dyne, 2008; Ang et al., 2007; Ang et al., 2011; Sousa et al., 2023; Yüksel, 2022) claim that people with high behavioral CQ levels are capable of adjusting their verbal and non-verbal behaviors to exhibit appropriate actions in various intercultural settings.

Overall, the results reveal a high CQ level among the preservice teachers involved in this study. This is similar to the results obtained by other studies (e.g., Abo Elazm, 2021; Al-Jarrah, 2016; Bal, 2022; Mahasneh et al., 2019; Sousa et al., 2023; Wujiabudula & Karatepe, 2020) but contrary to Atan (2020) and Yüksel and Ereş (2018) who reported an average CQ among their respondents in Turkey. It can be supposed that the gap in the results is due to the difference in the formula and set of interpretations used for CQ. The high CQ level of the preservice teachers in this study means that despite having a moderate knowledge of other cultures, they are highly aware of their cultural knowledge during intercultural exchanges, highly interested and confident in cross-cultural interactions, and exceptionally flexible in intercultural contexts. In the teaching field, this entails that the preservice teachers in this study are ready to teach in multicultural settings because, according to Yüksel (2022), teachers with a high CQ level can adapt their approach to teaching, evaluation and feedback when working with diverse students.

Table 5. Preservice Teachers' Overall Global Citizenship Level

Dimensions	Overall	
	Mean	Interpretation
Social Responsibility Dimension	2.70	Average
Global Competence Dimension	3.50	Satisfactory
Global Civic Engagement Dimension	3.41	Satisfactory
Overall	3.30	Average

Table 5 shows the overall global citizenship level of the preservice teachers. The results reveal that the preservice teachers scored the highest in the global competence dimension ($\bar{x}$=3.50), followed by the global civic engagement dimension ($\bar{x}$=3.41). These imply that the preservice teachers perceive their global competence and global civic engagement satisfactorily. However, they scored the lowest in the social responsibility dimension ($\bar{x}$=2.70), which is an average level. Overall, the results ($\bar{x}$=3.30) indicate an average global citizenship level among the preservice teachers.

The preservice teachers' satisfactory score in the global competence dimension indicates they view themselves as globally competent individuals who recognize their capabilities in helping solve global issues, adapting their behaviors to communicate successfully with others, and being informed of global issues and events. Similarly, Karatekin and Taban's (2018) student participants have a satisfactory notion of their global competence. Confirming this, globally competent individuals are described to be knowledgeable of their strengths and limitations in cross-cultural exchanges, can successfully engage in intercultural exchanges due to their ability to demonstrate a wide array of intercultural communication skills, and are interested and knowledgeable of worldwide issues and events (Morais & Ogden, 2011; Yüksel, 2022; Yüksel & Ereş, 2018).

Moreover, the preservice teachers had a satisfactory score in the global civic engagement dimension, which implies that they partake in volunteer work and local activities that help people and communities in need, support a global cause, and publicly express their views and concerns about global issues through various media platforms. This corresponds with several literatures (e.g., Morais & Ogden, 2011; Yüksel, 2022; Yüksel & Ereş, 2018) who described civically engaged individuals as people who volunteer or help in civic organizations, form their political voice, and participate in purposeful local actions to further global causes.

Meanwhile, the preservice teachers' average social responsibility level suggests that they may not be as concerned and responsible with the problems faced by people in other parts of the world. They somehow recognize that the world is fair but also acknowledge that other people have more opportunities than others. This finding starkly contrasts with Karatekin and Taban's (2018) finding that their participants had a satisfactory level of social responsibility. In comparison, socially responsible individuals are highly capable of assessing social issues, global justice and disparities, demonstrating altruism and empathy to address local and global problems, and understanding the connections between personal and local actions and their worldwide effects (Morais & Ogden, 2011; Yüksel, 2022; Yüksel & Ereş, 2018).

Generally, the preservice teachers in this study perceive themselves to have an average level of global citizenship. This finding differs from other investigations (e.g., Abo Elazm, 2021; Alshawi, 2023), whose respondents reported a positive assessment of their global citizenship traits. It can be said that the discrepancy in the result of the current study and other studies might have been due to the use of different tools to measure global citizenship and interpret the scores.

Despite the contrary results of other investigations, the present study's finding agrees with other studies (e.g., Karatekin & Taban, 2018; Kayışoğlu, 2016; McGaha & Linder, 2014; Temel, 2016; Ulukaya Öteleş, 2023; Yüksel & Ereş, 2018). In general, the preservice teachers' average global citizenship level in this study implies that their global citizenship knowledge, values, and skills may be deficient. This means that they lack the competencies and values of global citizens like global knowledge, dealing with uncertainties, critical thinking, moral reasoning, intercultural communication skills, cooperation and conflict resolution skills, respect and value for diversity, social justice, intergroup empathy and help, care for the environment, and a sense of responsibility for others (Massaro, 2022; Reysen & Katzarska-Miller, 2013; Yüksel & Ereş, 2018).

In the teaching field, teachers' insufficient global citizenship level can negatively impact the quality of global citizenship education (Yüksel & Ereş, 2018). The similarity of results on university students' average global citizenship level should direct higher education institutions, especially teacher education institutions, in improving their global citizenship education initiatives and strategies to enhance the preservice teachers' global citizenship. As such, local service-learning might offer opportunities to foster critical global citizenship among students, as demonstrated in the study by Adarlo (2020).

Table 6. Cultural Intelligence Level by Ethnic Identity

Ethnic Identity	Overall Mean	Qualitative Interpretation
Bicolano	5.58	High
Bisaya	6.08	High
Chinese	5.49	High
Ibaloi	5.25	High
Igorot	5.58	High
Ilocano	5.41	High
Kalinga	5.69	High
Kankanaey	5.39	High
Kapampangan	5.30	High
Pangasinan	5.51	High
Tagalog	5.08	High
Zambal	4.63	Medium
Ethnic identities with one respondent each (Applai, Bag-o, Batangueña, Chinese-English, Chinese-Ilocano, Cordilleran, Half-Igorot/Half-Tagalog, Ibannag, Ifugao, Ilocano-Tagalog, Ilonggo, Moro, Russian, Vietnamese)	5.90	High

Table 6 presents the CQ levels of the various ethnic identities the preservice teachers affiliate themselves with. The results reveal a variation in their CQ levels. It is observable that almost all of the preservice teachers' ethnic affiliations, including the international students, have a high cultural intelligence level except for the ethnic group Zambal, whose mean score is at a medium level.

The finding on the disparity in the CQ levels of the different ethnic identities is congruent with the findings of other studies (e.g., Beneroso & Alosaimi, 2020; Nel et al., 2015). However, despite the differences in the CQ levels, most of the ethnic groups that the preservice teachers identified with were found to have a high CQ level. Moreover, international preservice teachers were also found to have a high CQ level, which matches the CQ level of international students in the study of Al-Jarrah (2016) in Jordan. The high CQ level among numerous ethnic identities in this study suggests that these groups are mindful of their cultural knowledge, are familiar with cultural differences, are interested and confident in engaging in intercultural exchanges, and can adapt their behaviors to

diverse contexts. In today's globalizing world, the increasing interaction among students from different ethnic backgrounds encourages the development of their CQ, helping them to become more tolerant of diversity (Kaya, 2022; Yüksel, 2022). Mahasneh et al. (2019) argued that aside from maturity level, the high CQ level of university students is due to their exposure to a diverse student body. Applied in the context of the present study, the preservice teachers' exposure to a multicultural student body, as evidenced by the diverse ethnic identities, and possibly a positive experience with their cultural exposure in the university might explain the high CQ level among various ethnic groups. However, the lack of literature on the differences in CQ levels of various ethnic groups and their explanations prevents us from understanding the topic further.

Table 7. Global Citizenship Level by Ethnic Identity

Ethnic Identity	Overall Mean	Qualitative Interpretation
Bicolano	3.29	Average
Bisaya	3.18	Average
Chinese	3.01	Average
Ibaloi	3.15	Average
Igorot	3.23	Average
Ilocano	3.34	Average
Kalinga	3.38	Average
Kankanaey	3.25	Average
Kapampangan	3.33	Average
Pangasinan	3.44	Satisfactory
Tagalog	3.22	Average
Zambal	3.10	Average
Ethnic identities with one respondent each (Applai, Bag-o, Batangueña, Chinese-English, Chinese-Ilocano, Cordilleran, Half-Igorot/Half-Tagalog, Ibannag, Ifugao, Ilocano-Tagalog, Ilonggo, Moro, Russian, Vietnamese)	3.49	Satisfactory

Regarding the preservice teachers' global citizenship level according to ethnic identity, Table 7 reveals a disparity in the global citizenship levels of various ethnic identities in the study. While no group obtained a below-average global citizenship level, it is noticeable that Pangasinan and ethnic identities with one respondent each (i.e., Applai, Bag-o, Batangueña, Chinese-English, Chinese-Ilocano, Cordilleran, Half-Igorot/Half-Tagalog, Ibannag, Ifugao, Ilocano-Tagalog, Ilonggo, Moro, Russian, and Vietnamese) obtained a satisfactory global citizenship level, while the rest of the groups obtained an average level.

Parallel to this study's findings on Chinese preservice teachers' average global citizenship level, Karatekin and Taban (2018) also found that Turkish Erasmus students in Poland have an average global citizenship level. The results suggest that several ethnic groups represented in the present study may have limited global citizenship attributes. Although intercultural learning experiences brought about by exposure to a diverse student body do not certainly result in the development of global citizenship attributes, these can be opportunities for students to become socially responsible and culturally competent individuals (Kishino & Takahashi, 2019). Regrettably, the lack of research on the global citizenship levels of various ethnic groups hinders further understanding of the matter.

Table 8. Preservice Teachers' Cultural Intelligence Level by Specialization

Specializations	n	CQ Mean	SD	Qualitative Interpretation	Level of Difference	
					P-value	Qualitative Interpretation
BEED	38	5.36	0.646	High		
BPED	9	5.43	0.863	High		
BSED English	184	5.40	0.633	High		
BSED Math	8	5.56	1.171	High	0.103	Not Significant
BSED Science	11	4.91	0.814	Medium		
BSED Social Studies	45	5.66	0.642	High		
BSNED	21	5.26	0.560	High		

Table 8 indicates the statistical results of the preservice teachers' CQ levels based on specialization. Among the specializations, Social Studies majors rated their CQ the highest ($\bar{x}$=5.66), which can be attributed to their curriculum that includes subjects related to politics, economy, culture, and society. In contrast, Science majors ($\bar{x}$=4.91) scored the lowest in the CQS, the only medium CQ level among the specializations. However, the ANOVA results (p-value=0.103) reveal no statistical difference among the CQ scores of the various specializations, indicating that the preservice teachers' specialization did not considerably affect their CQ scores. The preservice teachers, regardless of their specialization, exhibit the same level of competence to work and succeed in a multicultural environment.

The study's result is similar to other studies (e.g., Abo Elazm, 2021; Ningrum, 2019), who also reported that their participants' specialization did not influence their CQ scores; and the study Caingcoy et al. (2022), who uncovered that the specialization of preservice teachers in Bukidnon did not provide them an edge in culturally responsive teaching. According to the curriculum of the preservice teachers in the present study, the insignificant distinction in CQ among the specializations could have arisen from the standard subjects taken by the preservice teachers, which are geared towards developing their competence in cultural awareness, cultural sensitivity, cultural knowledge, intercultural communication, civic services, and inclusive and multicultural education.

Table 9. Preservice Teachers' Global Citizenship Level by Specialization

Specializations	n	Mean	SD	Qualitative Interpretation	Level of Difference	
					P-value	Qualitative Interpretation
BEED	8	3.24	0.353	Average		
BPED	9	3.29	0.283	Average		
BSED English	184	3.26	0.404	Average		
BSED Math	8	3.57	0.634	Satisfactory	0.086	Not Significant
BSED Science	11	3.17	0.487	Average		
BSED Social Studies	45	3.52	0.533	Satisfactory		
BSNED	21	3.20	0.416	Average		

Based on the results shown in Table 9, a disparity is observed in the global citizenship scores of the preservice teachers according to their specialization. The Math ($\bar{x}$=3.57) and Social Studies majors ($\bar{x}$=3.52) had higher observance (both satisfactory) of their global citizenship competencies, while the Science majors ($\bar{x}$=3.17) scored average. Nonetheless, the variation in the preservice teachers' global citizenship scores of the preservice teachers due to their specializations was nonsignificant (p-value=0.086). This means that the preservice teachers' specialization is not a factor in determining their global citizenship. This might be related to their similar educational experiences with the university's internationalization programs. Because of the internationalization of Philippine higher education, global dimensions were incorporated into their academic subjects, such as general education courses and campus activities, which provide opportunities for all preservice teachers to develop their global citizenship competencies and empowerment for service.

The study's result mirrors that of Abo Elazm's (2021) finding. However, most of the available literature (e.g., Alshawi, 2023; Anthony et al., 2014; McGaha & Linder, 2014) negates the study's findings as they revealed academic specialization to impact the students' global citizenship substantially. It is essential to understand that compared to the present study, which only focused on the teacher education department, the works of Alshawi (2023) and Anthony et al. (2014) involved respondents from different colleges, and this could be the reason for the discrepancy between findings on the influence of specialization on students' global citizenship.

Table 10. Cultural Intelligence Level by Year Level

Year Levels	n	Mean	SD	Qualitative Interpretation	Level of Difference	
					P-value	Qualitative Interpretation
1st Year	57	5.28	0.537	High		
2nd Year	59	5.43	0.658	High	0.133	Not Significant
3rd Year	105	5.37	0.710	High		
4th Year	95	5.52	0.697	High		

Table 10 indicates the preservice teachers' CQ level by year level. The results show an apparent progression of the preservice teachers' CQ from the first year ($\bar{x}$=5.28) to the fourth year ($\bar{x}$=5.52), although there is a slight dip in the third-year or junior preservice teachers' CQ score ($\bar{x}$=5.37). Subjected to one-way ANOVA, the results (p-value=0.133) show that their CQ insignificantly varies by year level. The findings demonstrate that the preservice teachers' year level did not determine their CQ despite the progression of their CQ.

Several investigations (e.g., Senel, 2020; Wujiabudula & Karatepe, 2020) corroborate the results of this study. Mahasneh et al. (2019) opined that university students represent a level of maturity that is knowledgeable and understanding of other cultures and act appropriately in intercultural situations. Conversely, the results of other investigations (e.g., Atan, 2020; Balli, 2017) differ from the current study's findings, as they found a significant relationship between students' year level and CQ. Atan (2020) exposed that the contents learned at higher class levels contribute to CQ development and claimed that individuals' CQ levels increase as they get older and gain more education and experience. The present study's findings, albeit insignificant, show an apparent contribution of the cultural contents and training gained by the preservice teachers as they advance to the succeeding levels, as evidenced by the improvement of their CQ. However, the insignificant difference between the CQ levels of the preservice teachers, notwithstanding their year level, could be related to the similarity of their exposure to diverse cultures in their environment and through their use of social media.

Table 11. Global Citizenship Level by Year Level

Year Levels	n	Mean	SD	Qualitative Interpretation	Level of Difference	
					P-value	Qualitative Interpretation
1st Year	57	3.18	0.386	Average	0.017	Significant
2nd Year	59	3.32	0.436	Average		
3rd Year	105	3.25	0.415	Average		
4th Year	95	3.40	0.470	Average		

Meanwhile, Table 11 presents the preservice teachers' global citizenship scores by year level. As the results indicate, there is an upward trend in the preservice teachers' global citizenship scores from the first year ($\bar{x}$=3.18) to the fourth year ($\bar{x}$=3.40), except for a slight drop in the third-year preservice teachers' global citizenship score ($\bar{x}$=3.25). After performing one-way ANOVA, the results (p-value=0.017) imply a significant positive relationship between the preservice teachers' year level and their perception of their global citizenship traits.

This finding agrees with Ulukaya Öteleş (2023), who reported that as the preservice teachers' knowledge and awareness increase as their year level upgrades, their global competence and global civic engagement levels also increase. In the present study, the significant variation in global citizenship among the preservice teachers might be attributed to their curriculum. As they upgrade in year level, their subjects become more in-depth and complex and include more global dimensions, which might have led to more knowledge about the world, a better grasp of the plight of other people, and empowerment to serve. Especially at the higher levels, they are given more opportunities to engage in outside activities to practice their global citizenship.

Contradictory to the study's results, several research (e.g., Bulut, 2019; Kishino & Takahashi, 2019; McGaha & Linder, 2014) established that students' year level is not a predictor of global citizenship. Although statistical analyses found no substantial effect of the students' years in the university on their global citizenship scores, Kishino and Takahashi (2019) found that senior students appreciated their academic courses better than junior students because the former could consolidate their learning experiences in the university. In the present study, it can be suggested that as the preservice teachers advance in year level, they develop a broader perspective and become more mature in understanding and confident in acting on global concerns.

Table 12. Cultural Intelligence Level by Overseas Experience

Cultural Intelligence	Yes (n=61)			No (n=255)			Level of Difference	
	Mean	SD	Q.I.	Mean	SD	Q.I.	P-value	Q.I.
Overall CQ	5.52	0.713	High	5.38	0.659	High	0.151	Not Significant

Table 12 indicates the CQ levels of the preservice teachers by overseas experience. The data shows that preservice teachers with overseas experience ($\bar{x}$=5.52) exhibited a higher CQ than those without overseas travel ($\bar{x}$=5.38). Nevertheless, the T-test result (p-value=0.151) shows that the gap is insignificant, implying that the overseas experience variable did not determine the preservice teachers' CQ. Specifically, the preservice teachers who had

experience going abroad had an insignificant CQ advantage over those without overseas experience. Similarly, Bal (2022) argued that going abroad does not necessarily result in more interest and tolerance in dealing with other cultures. Brancu et al. (2016) also reported that students' personal travels overseas did not significantly improve their CQ due to a lack of cross-cultural interaction.

Sousa et al. (2023) argued that traveling abroad to contact diverse cultures is unnecessary since opportunities arise in the home country that allows interaction with those from different cultural backgrounds. In the present study, the negligible difference in CQ between those who traveled abroad and those who did not might be due to their comparable cultural exposure in the university. With the intensifying globalization and internationalization of Philippine higher education, their cultural exposure in the academe and environment could have a parallel effect on the preservice teacher's CQ, regardless of whether they traveled overseas. Since the preservice teachers are studying in Baguio City, an educational center in the Northern Philippines and a popular tourist destination, intercultural contact is inevitable. Although cultural exposure in the classroom is insufficient for developing CQ, cultural exposure in the place of residence enhances the CQ levels which makes them as culturally competent as those with experience traveling abroad (Sousa et al., 2023).

Contrarily, the findings of several studies (e.g., Balli, 2017; Sousa et al., 2023; Wujiabudula & Karatepe, 2020) reported a significant relationship between overseas experience and CQ levels. University students with overseas experience notably had higher CQ levels than their colleagues without experience abroad. Several studies (e.g., Balli, 2017; Wujiabudula & Karatepe, 2020) recommended providing overseas experience to students. Specifically, participating in exchange programs effectively promotes CQ (Alexander et al., 2021; Gökten & Emil, 2019; Sousa et al., 2023). Filipino preservice teachers who participated in international teaching internships considered the experience helpful in developing their intercultural communication skills and multicultural understanding (Añar et al., 2017; Nurazizah et al., 2021).

While most of the studies revealed a significant impact of student exchange programs on students' CQ levels, it must be underscored that the present study did not specify the type of overseas experience the preservice teachers had. It can be argued that certain types of overseas experience significantly impact the students' CQ, while other types of overseas experience do not.

Table 13. Global Citizenship Level by Overseas Experience

Global Citizenship	Yes (n=61)			No (n=255)			Level of Difference	
	Mean	SD	Q.I.	Mean	SD	Q.I.	P-value	Q.I.
Overall GC	3.35	0.402	Average	3.28	0.444	Average	0.282	Not Significant

Table 13 indicates the preservice teachers' global citizenship levels by overseas experience. As seen in the results, preservice teachers who had traveled overseas ($\bar{x}$=3.35) had a slightly higher perception of their global citizenship than their counterparts ($\bar{x}$=3.28). While a gap is observed in the global citizenship scores between the preservice teachers with overseas experience and those without, the T-test result (p-value=0.282) shows no statistical variation between the two groups. The result implies that overseas experience did not substantially affect the preservice teachers' global citizenship level. This might be due to their parallel educational experience in the university, notwithstanding whether they traveled overseas or not.

This study confirms the findings of others on the nonsignificant influence of overseas experience on global citizenship. Accordingly, joining study abroad programs does not automatically develop global dispositions among individuals and transform learners into global citizens (Kishino & Takahashi, 2019; McGaha & Linder, 2014). Contrary to the study's findings, other research (e.g., Chen, 2010; Karatekin & Taban, 2018; Wynveen et al., 2012) reported a considerable impact of study abroad programs on students' global citizenship. Additionally, the experiences gained by Philippine preservice teachers from international teaching internships supported the development of their competence to become global teachers (Añar et al., 2017; Nurazizah et al., 2021; Tique, 2023). The contradiction between the current study's findings and other studies regarding the impact of overseas experience on the students' global citizenship level may be due to the kind of overseas experience specified in most studies since the present study did not specify the type of overseas experience the preservice teachers had.

Table 14. Relationship Between the Cultural Intelligence and Global Citizenship Levels

Mean Cultural Intelligence Level	Global Citizenship Level	r	P-value	Significance
5.41	3.30	0.487	< 0.001	Significant

Table 14 presents the relationship between the preservice teachers' cultural intelligence and global citizenship levels. The Pearson r correlation result (<0.001) indicates a significant positive correlation between the preservice teachers' CQ and global citizenship. In other words, their CQ and global citizenship affect each other.

Similarly, previous works (e.g., Abo Elazm, 2021; Kaya, 2022; Yüksel & Ereş, 2018) also concluded that the concepts of CQ and global citizenship are positively correlated. According to Kaya (2022), a positive relationship between CQ and global citizenship is expected because both involve respect for differences, intercultural sensitivity, and intercultural competence. In addition, Karataş and Arpaci (2022) concluded that CQ is significant in enhancing social justice perceptions and global citizenship levels. Karataş and Arpaci (2022) and Kaya (2022) argued that cultural intelligence is critical in fostering global citizenship and that having a high CQ makes it easier for individuals to become global citizens.

It is also interesting to note that a separate examination of both scales reveals that the Global Citizenship scores were average despite generally having high CQ scores. The CQS broadly measures an individual's consciousness, knowledge, motivations, and behavior concerning other cultures. Conversely, the Global Citizenship Scale relates to the person acting on global concerns. It thus can be surmised that the preservice teachers, albeit knowledgeable of and competent in cross-cultural scenarios, still have room for improving their participation in global concerns. This means that the preservice teachers still need to tap into their agency.

In Giddens' (1984) structuration theory, agency or human action is essential in continuing social practices or structures and transforming society through reflexive monitoring and rationalizing actions. In the context of this study, the preservice teachers have a high CQ level structurally enabled by their academic training geared towards developing their competence in inclusivity, multiculturalism, and globalization while thriving in the present-day milieu of increasing connectivity and information access through the worldwide web. Still, they are probably confronted with the challenge of practicing their cultural intelligence to effect a meaningful societal transformation.

A possible reason for their lack of agency might be that the preservice teachers function in a personal space. To support this argument, while the items in the CQS focused on one's ability to function personally and interpersonally in any cultural context, the items in the Global Citizenship Scale focused on their stance on global social justice and equality, their knowledge of international issues, and their plans to volunteer, among others, which, in essence, involved thinking of others and the world in general. Thus, the disparity in their scores on both scales suggests that the preservice teachers may improve their global citizenship scores by transcending from their private spaces into the more public spheres of engagement and responsibility.

Conclusion

With the realities of globalization, educational institutions are molding preservice teachers to be culturally and globally competent to better prepare them for multicultural job settings. In this milieu of a globalizing world, the multicultural Philippine society, and the internationalization of Philippine higher education, it is timely and significant to assess the CQ and global citizenship of Philippine preservice teachers to obtain evidence that can help inform Philippine teacher education providers and policymakers about the readiness of would-be teachers to be deployed in multicultural and global settings. To that end, this study was conducted to measure the preservice teachers' overall cultural intelligence and global citizenship levels, to determine the differences in cultural intelligence and global citizenship levels according to ethnic identity, specialization, year level, and overseas experience, and to identify the relationship between cultural intelligence and global citizenship.

The study found that while the preservice teachers obtained high metacognitive, motivational, behavioral, and overall CQ levels, their medium cognitive CQ level is an area for improvement, indicating the need to increase their knowledge about other cultures. As for global citizenship, their average global citizenship level denotes that they need to improve global citizenship attributes such as global competence and global civic engagement, both of which were found to be satisfactory. Of the global citizenship categories, their social responsibility scored the least, obtaining only an average level. This is a matter of concern because the results imply that the preservice teachers lack empathy towards the injustices experienced by others on a global scale. As for demographic variables considered in this study and their interaction with CQ and global citizenship, specialization, year level, and

overseas experience did not substantially impact their CQ levels. The same can be said for global citizenship, except for the year level, which significantly affected their global citizenship levels. When the preservice teachers were grouped according to their ethnic identities, most ethnic groups measured high in their CQ levels but only average for their global citizenship level. Overall, the study identified a positive correlation between cultural intelligence and global citizenship.

Recommendations

Considering the study's findings, government agencies, higher education institutions (HEIs), teacher education institutions (TEIs), and curriculum developers must improve the preservice teachers' CQ to develop their global citizenship attributes. Importance should be placed on improving their cognitive CQ. At a policy level, this can be done by further intensifying the implementation of internationalization strategies, which include ensuring the quality of HEIs, student, faculty, and staff mobility, and global linkages of HEIs, as stipulated in the CHED Memorandum Order No. 55 series of 2016. In particular, and although the study did not find any impact of students' overseas experience on their CQ and global citizenship levels, government agencies and HEIs should increase the opportunities for preservice teachers to participate in study abroad programs or international teaching internships where they can interact with the locals of the host country. Conversely, government agencies, curriculum developers, and HEIs can also boost the students' CQ and global citizenship levels by enriching the academic courses and activities in the university as part of the home-based or campus-based internationalization. Specifically, employing an experiential learning approach in their courses can offer opportunities to expose the preservice teachers to local and global issues and have them undergo critical reflection, which can help translate their cultural intelligence into actions, subsequently developing their global citizenship. Similarly, enhancing the contents and training per year level in professional education subjects will improve the preservice teachers' pedagogical skills, preparing them and making them effective in multicultural education and teaching global citizenship. Aside from these, given the multicultural context of the locality where this study was conducted, HEIs can promote the preservice teachers' cultural intelligence and global citizenship levels by organizing more multicultural activities, events, and projects on campus where students can participate in cross-cultural interactions with diverse students and gain new insights about their roles in the world.

Moreover, future investigations may use other CQ and global citizenship measurements and complement quantitative methods with a qualitative approach to provide points for comparisons with the current study's findings. Additionally, researching the factors behind the CQ and global citizenship levels of various ethnic groups would be valuable. Finally, the impact of other variables, such as socioeconomic status and membership in school organizations, on the students' CQ and global citizenship levels should also be examined.

Limitations

One limitation of this study is that it only utilized a quantitative method to determine the relationship between the preservice teachers' cultural intelligence and global citizenship levels. Moreover, only 316 preservice teachers at a private university in Baguio City, Philippines, participated in the study.

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Authors Contribution Rate

Both authors contributed equally to the completion of the study.

Ethical Approval

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The Effect of Digital Content on Listenig Skills in Middle School Turkish Teaching

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Abstract
The course of development of technology, its speed in the recent period and the point it has reached have led our relationship with technology to become a necessity rather than a choice. In this respect, teaching activities that are not intertwined with technology and do not include digital elements will remain as practices that will not go beyond the interest and expectations of students who are the subject of educational environments. This study, which examines the effect of digital content on listening skill in secondary school Turkish teaching, is at an important point in terms of showing the effect of digital elements on listening skill, which is the first learning channel of human beings and will continue until death, and which should be carefully emphasized in terms of forming the basis for other language skills. The sample of this study consists of 60 students in the seventh grade of a secondary school in Elazığ province. In the study, mixed research method was preferred as the method and sequential explanatory design was preferred as the design. Quasi-experimental design was used in the quantitative part of the study and phenomenology design was used in the qualitative part. In the quantitative part of the study, there was one control and one experimental group. In order to obtain quantitative data within the scope of the research, the Listening Skills Scale developed by Yalçın & Özcan (2022) was applied to the control and experimental groups as pre-test and post-test. The experimental and control groups were determined according to the pre-test results of the students participating in the study. In the qualitative part of the study, data were obtained from interviews with the students and these interviews were analyzed by content analysis. The results of the study showed that there was a significant difference between the listening skill scale scores of the students in the experimental and control groups in the post-test application in favor of the experimental group, there was a significant increase between the pre-test and post-test scores of the listening skill scale applied to the control group, and there was a significant difference between the pre and post-application listening skill scale scores of the experimental group. Considering the results obtained from the interviews, it was seen that listening practices enriched with digital content facilitated comprehension, digital content practices improved listening skills and created a desire to participate in new activities. At the end of the study, suggestions were made for researchers, educators and related institutions.

Keywords: Digital content, Listening activities, Listening skills, Middle school students, Multimedia

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Introductıon

Listening, which starts in the womb (Güneş, 2017, p. 83), seems to be the first activity (Gündüz & Şimşek, 2014, p. 22) after the first contact with the world. In this respect, listening is an important means of success, learning (Tayşi & Özbay, 2016) and accumulation of what is learned (Gündüz & Şimşek, 2014, p. 22). In addition to being a learning tool, listening has a high level of importance for the development of comprehension, mental, emotional and social skills (Güneş, 2017, p. 84). Listening is one of the primary learning channels that form the basis for all language skills. In this respect, it is a skill that should be carefully emphasized and planned with a deliberate teaching process. Listening is also a challenging language skill. In this respect, it is essential to keep the student's motivation at a high level. In order to overcome this challenging situation, the preparation of successful and interesting listening activities (Brown, 2006) is a matter that teachers should pay attention to.

In the literature, listening skill is considered to be a skill with a very low importance value among language skills. As the main indicator of this situation, the number of learning outcomes in the Turkish Language Teaching Program is a clue for us. Listening skill, which has the lowest number of learning outcomes after speaking, has a structure in which teachers only read a text or make students listen to a sound saturation and then have them do the activities. The main underlying reasons for this are the perception that students acquire listening skills naturally and on their own (Özbay & Melanlıoğlu, 2012) and the idea that there is no need to spend too much time on the instructional side (Doğan, 2010). In addition, the fact that teachers do not have sufficient equipment and infrastructure to enrich listening practices and that they succumb to the general opinion about listening can be said as other reasons. Listening as a skill affects students' formal lives not only on its own but also as a basis for other language skills. The process of language acquisition starts with listening (Özbay & Melanlıoğlu, 2012) and listening skill affects other learning areas such as reading, speaking and writing (Güneş, 2017) and students' learning. Woottipong (2014) stated that a child receives a large amount of verbal input through listening before developing speaking, writing and reading skills, and that these skills develop later as the child matures. For this reason, listening skills should be developed at the first stage of learning, it should be kept in mind that listening is a skill like other language skills on which it is based and that listening skills, like all other skills, can be developed through intentional teaching and purposeful practices (Palmer, 2014). Attempting to present listening texts in an abstract structure only as a sound element stands as an obstacle in the development of listening skills for this age group of students who tend to perceive the concrete more easily. Considering the perception and learning differences of today's students, it has become a necessity to go beyond traditional teaching methods.

Born into technology in a sense, children of this period have technology at the center of their lives. This generation, also known as the digital generation, whose very existence is based on technology, tends to meet all their vital needs over the internet. Eating and drinking, shopping, traveling, communication, and many other needs can be met over the internet. In addition, this generation's relationship with technological devices is at a high level. Although Generation Z, who feel incomplete or lonely without cell phones, tablets, computers, etc., are sometimes called technology addicts, technology remains a standard element of life for this generation. Similarly, even if they are far away from their friends, family or people they care about, they can keep in touch with them through technology (Altunbay & Bıçak, 2018) and continue their communication virtually. Considering that this generation can deal with many different jobs at the same time, use mass media effectively, and access information quickly (Kırık & Köyüstü, 2018), the importance of transferring information and meeting the expectations of the relevant generation in the materials presented once again emerges.

Today's students, who take an active role in the learning process, acquire knowledge in different ways. In fact, the existing technology and technological tools and internet access have moved the student from a passive state in which the student is at the center and the student is active in the learning process and can intervene in the process, which serves the constructivist teaching process. Students of the digital age are in a desire to learn through materials containing pictures and videos, which push the text to the second plan (Türel, 2019). Technological devices also offer these students, whose individual characteristics and learning styles are different (Türel, 2019), opportunities to choose from. With these opportunities, today's students have developed a structure that can constantly renew their knowledge, determine their learning preferences, analyze and develop critical thinking skills.

Learners of the digital age have a number of specific expectations and skills stemming from their digitalized lives. Learners now prefer to experience information instead of just hearing it. In addition to learning by doing and experiencing, it is observed that they create a learning experience in the form of learning by trying, failing or succeeding. In our time, individuals can access various solutions to any action they cannot do or any problem they

cannot solve by using the internet. According to Türel (2019, p. 94), in our age, it is more important to have the skills of accessing information and integrating the information to make it usable rather than knowing.

Another reflection of the developments and changes in the learning process is the reorganization of learning environments or, in other words, teaching environments. The adaptation of technology to teaching environments not only increases motivation for both teachers and students in the teaching and learning process, but also brings great richness to teaching environments (Ciğerci & Gültekin, 2019). The cheapening and ease of the cost of applying these technological developments to teaching environments has led many countries to turn their faces to these developments, learning environments have been designed accordingly and educational policies have changed in this direction.

When we look at the subject specifically in terms of the learning environment, equipping these environments with technological tools and equipment that can attract the attention of students and meet their needs will provide more effective learning. Multimedia that includes more than one of the elements such as text, graphics, sound, animation, video, etc. with a video that is watched or a voice recording that is listened to (Türel, 2019, p. 257) significantly increases learning and understanding since it is a system that effectively combines elements such as seeing, listening and reading, which are among the ways of learning and obtaining information for people (Çakmak, 1999). Thanks to the multimedia that activates the static lesson environment (Benzer, 2019), the concepts to be taught and the texts related to the information to be given can be supported with visual elements and music, and the learning process can be made more effective. Multimedia tools have a facilitating structure that saves students from the boredom of a monotonous lesson, as well as providing the opportunity to explain a subject that has not been understood for a long time in a short time, and saves people time (Akın & Çeçen, 2015).

As a result of all these developments and the inability to respond to the demands and expectations of the society and the educated population in particular, change has become a necessity for educational institutions in a sense, and this has led to a change in educational programs. The first examples of this change started to be seen in the 2005-2006 academic year. A new learning area called visual reading and visual presentation was added to the curriculum and visual reading and visual presentation acquisitions were included in the other areas of the 6th, 7th and 8th grades. Visual reading refers to reading, understanding and interpreting shapes, symbols, pictures, graphics, tables, body language, nature and social events, mass media and information technologies other than written texts (Erkunt & Akpınar, 2002). Visual presentation is the sharing and transferring of this reading, understanding and interpretation with others. Digitalization reconsiders the components involved in the learning process within the framework of changing paradigms; it defines new roles for the teacher, learner, learning environment and learning material (Erdem & Erol, 2021, p. 18). Now, the traditional terms of instructional materials have been replaced by hypertexts, motion graphics, video, animation, simulation, augmented reality (Sakman, 2020), which contain content that can appeal to multiple senses. According to Gündüz & Şimşek (2013), the most effective learning is the learning in which the most sensory organs are active. In this respect, the permanence of learning is possible with the inclusion of many sensory organs in the learning process and the successful realization of the learning activity is possible only if these sensory organs are active in the process (Hakkoymaz, 2020). From this point of view, the preparation of teaching materials to be prepared in line with these principles in a way to appeal to many sensory organs, especially in listening texts, instead of just giving classical listening texts, these elements will be supported by visual elements and different auditory elements will meet student expectations and increase students' success.

For all these reasons, it has become a necessity to prepare digital content suitable for learning for today's students who have technology at the center of their lives and meet most of their needs through digital tools and the internet. In this context, the aim of this research is to determine the effect of digital content on listening skills in secondary school Turkish language teaching. In line with this purpose, the hypotheses whose answers are sought throughout the research are as follows:

- There is a difference between listening skill pre-test scores between experimental and control groups.
- Classical listening skill practices have an effect on listening skill development.
- Listening practices and activities created with digital content have an effect on students' listening skills.
- There is a difference between the post-test scores of listening skills between the experimental and control groups.
- What are the students' views on listening practices enriched with digital content and digitalized listening activities?

Method

In this section; research method, study group, data collection tools, research process and data analysis are given.

Research Method

This study, in which the effect of digital content on listening skills was examined, was planned as a mixed methods research. Mixed methods research is methodologically defined as the combination of quantitative and qualitative methods using the postpositivism view as a basis, and then combining the results obtained from both methods (Toraman, 2021). The aim of mixed methods research is to compare and discuss similar or different results obtained from quantitative and qualitative data by providing data diversity, and to ensure that the results obtained with qualitative or quantitative data complement and explain each other.

In this study, since it was aimed to explain the quantitative data with the findings obtained by collecting and analyzing qualitative data after collecting and analyzing quantitative data, an explanatory sequential mixed methods research design was used as the design. In the explanatory sequential mixed methods research design, it is aimed to explain quantitative data with qualitative data after obtaining and analyzing qualitative data and obtaining and analyzing quantitative data (Creswell & Plano Clark, 2017).

The quantitative dimension of the study was designed as a quasi-experimental study. The active variable in such studies with control and experimental groups means that at least one group will be the experimental group and there will be a control group without an experimental application (Gliner et al., 2015).

Phenomenological design was used in the qualitative dimension of the study. In the qualitative part of the research, data were obtained through semi-structured interviews with students and these interviews were analyzed by content analysis.

Population and Sample

The population of this study consists of 7th grade middle school students within the Ministry of National Education in Elazığ province in the 2021-2022 academic year. The sample of the study consists of 7th grade students of a secondary school within the Ministry of National Education within the borders of Elazığ province, which was determined by random method. There are 60 students from two branches, one experimental and one control group, in the sample of the study. Twenty-nine of these students were in the experimental group and thirty-one were in the control group. The demographic information of the students participating in the study is given in the table below.

Table 1. *Demographic information of the participants*

		N	Percent
Gender	Female	25	41,7
	Male	35	58,3
	Total	60	100
Mother's education level	Primary School	14	23,3
	Middle School	21	35,0
	High School	11	18,3
	University	14	23,3
	Total	60	100,0
Father's education level	Primary School	18	30,0
	Middle School	30	50,0
	High School	7	11,7
	University	5	8,3
	Total	60	100

Of the 60 students who participated in the study, 25 (41.7%) were female students and 35 (58.3%) were male students. The mother's education level of the students was high school graduate with 21 students and 35 percent. The remaining distribution according to mother's educational status is 14 university (24%), 14 primary school (24%) and finally 11 secondary school (18.3%).

The distribution of the students participating in the study according to the father's educational status variable is high school graduates with a rate of 30 people and 50%. This distribution is followed by university graduates with 18 people and 30%. Next, 7 people (11.7%) are middle school graduates and 5 people (8.3%) are primary school graduates.

The results of the independent samples t-test conducted to determine whether there was a significant difference between the listening skill scale scores of the experimental and control groups in the pre-application are shown in the table below.

Table 2. Independent samples t test results of the control group and experimental group in the pre-application

	Groups	N	$\overline{X}$	SS	t	p	Cohen'd
Listening skill	Control	31	120,25	9,88	,134	,894	,035
	Experimental	29	119,82	14,63			

Sd= 58

According to the table above, which shows the independent samples t test results of the control group and the experimental group in the pre-practice, there is a difference in the mean scores of the control group and the experimental group in the listening skill in the pre-application ($\bar{x}$ control=120,25; $\bar{x}$ experiment= 119,82). The result of the independent groups t test conducted to determine whether this difference was significant or not was t=-0,134 and this difference was not significant (p>0,05). According to this result, it was seen that there was no significant level difference between the control group and the experimental group students, and the students in the two groups were at a similar level in terms of listening skills. The fact that Cohen's d value, which shows the effect power of the data, has a very low level of effect power confirms this situation. In this sense, it can be concluded that the control and experimental group students formed before the experimental process are equal in terms of listening skills, so the effect of digital content, which is a quasi-experimental process, on students' listening skills can be investigated.

Study Group

The study group for the qualitative dimension of the research consists of nine students. The students to whom the semi-structured interview form was applied were determined on the basis of volunteerism and the interviews were finalized after the data reached fulfillment.

Data Collection Tools

In this study, which is a mixed methods research, the Listening Skills Scale was used to obtain quantitative data and a semi-structured interview form was used to obtain qualitative data.

Quantitative Data Collection Tool

In order to obtain quantitative data within the scope of the research, the Listening Skills Scale developed by Yalçın and Özcan (2022) was applied to the control and experimental groups as pre-test and post-test. The listening skill scale is a five-point Likert-type scale consisting of 32 items. In the development phase of the scale, an item pool of 45 items was first created, expert opinion was taken and as a result, 8 items were removed from the pool and a form with 37 items was created. This form was administered to 1334 5th, 6th, 7th and 8th grade students from 12 different schools in the Aegean Region during the 2021-2022 academic year. After the application of the relevant scale, test-retests were conducted and EFA and CFA analyses of the collected data were conducted. According to the results obtained, it was proved that the KMO value was .93, the scale had a reliable and valid structure as a result of the CFA analysis, and a total of 32 one-dimensional statements measured the listening skills of secondary school students. There were no reverse coded items in the scale.

The KMO values obtained as a result of the application of this scale to the control and experimental groups in this study are given in the table below.

Table 3. *Cronbach's Alpha values of the listening skill scale in the pre- and post-application*

	Pre-application	Post-application
Listening skill scale	0,779	0,857

As seen in the table above, the scale has an acceptable level of reliability.

Qualitative Data Collection Tool

A semi-structured student interview form was used to collect data for the qualitative dimension of the study (Appendix 1). A total of 12 questions formed as a result of the literature review were presented to an associate professor and a doctoral academic with a doctorate degree in the field of Turkish education for expert opinion. In line with the opinions of the experts, it was decided that the qualitative data collection tool would consist of 6 questions. In order to reach students' opinions on listening practices and activities enriched with digital content,

students were informed about the application before the one-to-one application, voice recordings were taken to prevent data loss and these voice recordings were transcribed.

Research Process

This section provides information about the implementation and data collection processes. The timeline of the applications of the listening skills scale to obtain quantitative data and the semi-structured interview form applications to obtain qualitative data are shown in Table 4.

Table 4. *Implementation Schedule of the Study*

Date	Hour	Content
5-8.04.2022	08.20-9.50	Information / Pre-Test Application
11-15.04.2022	08.20-9.50	Listening Practice
18-22.04.2022	08.20-9.50	Listening Practice
25-29.04.2022	08.20-9.50	Listening Practice
5-6.05.2022	08.20-9.50	Listening Practice
9-13.05.2022	08.20-9.50	Listening Practice
16-20.05.2022	08.20-9.50	Listening Practice
23-27.05.2022	08.20-9.50	Listening Practice
30-31.05./1-3.06.2022	08.20-9.50	Listening Practice
4.06.2022	08.20-9.50	General Evaluation/ Post-Test Application
6.06.2022	08.20-9.50	Conducting Interviews

Quantitative Data Collection Process

For the listening skills scale and semi-structured interview form applications applied to the students participating in the study, firstly, the ethics committee approval of Fırat University numbered 1431 and dated 06.01.2021 was obtained. After obtaining the approval and permission from Elazığ Provincial Directorate of National Education dated 04.04.2022 and numbered 79137285-605.01-E.47030475, the Listening Skills Scale developed by Yalçın and Özcan (2022) was applied to the control group and the experimental group as a pretest in order to reach quantitative data. In the next stage, the control group was made to listen to the listening texts; Cahit Arf, İlk Çocukluk, Artık Antarktika'da Buz Dağlarının Arasındayız, Kırkpınar'a Adını Veren Kırk Yiğit, which are included in the MoNE (2021) Turkish Textbook at two-week intervals, and the activities related to the texts were done through the textbook. The experimental group was made to listen to/watch the digital versions of the same listening texts developed with digital content via the smart board in the classroom at two-week intervals. The digital versions of the activities of each text were also made by the students on the smart board. At the end of the eight-week period, the listening skill scale was administered again as a post-test.

Table 5. *Implementation Process of the Study*

Group	Pre-application	Application	Post-application
Control Group	Application of the Listening Skills Scale as a pre-test	Implementation of the usual course	Application of the Listening Skills Scale as a post-test
Experimental Group	Application of the Listening Skills Scale as a pre-test	Implementation of digital content-based teaching	Application of the Listening Skills Scale as a post-test

Content Preparation Process

In the process of preparing digital content, four listening texts (Cahit Arf, İlk Çocukluk, Artık Antarktika'da Buz Dağlarının Arasındayız, Kırkpınar'a Adını Veren Kırk Yiğit) in the Turkish textbook for the 2020-2021 academic year were selected to create digital content. The process of preparing the contents was realized as follows:

1. A script was first written for the selected listening texts.
2. In the script, which was created by being stick to the text, the points of the text that were wanted to be emphasized were focused on in accordance with the level of the students.
3. Visuals and background music were selected considering the type of digital content (animation, timeline...).
4. Vector or high-resolution jpeg images that can be edited more easily were preferred when selecting images.
5. The selected visuals were edited in Adobe Photoshop and Adobe Illustrator programs according to the storyboard flow, the scenes to be created were determined, made ready for animation and converted into video animation in Adobe Premiere program.
6. During the process of creating the draft storyboard scenes of the determined scenes, the opinion of a visual design expert was taken to examine the scenes in terms of suitability for the age level and technical aspects. The

drawings used in the storyboard creation process were obtained from websites that provide royalty-free and free stock image services.
7. For the voiceover used in the video animations, the relevant audio file was added to the video by adhering to the voiceover created by the Ministry of National Education.

Qualitative Data Collection Process

In order to obtain qualitative data, a semi-structured interview form was applied to the volunteer students in the experimental group at the end of the experimental period. Open-ended questions were included in the interviews, the interviews continued until data fulfillment was reached, and the interviews were terminated at the end of 9 students because data fulfillment was determined in order to avoid repetition. The interviews with the students were audio-recorded to avoid data loss and these audio recordings were later transcribed.

Analysis of Data

This section provides an explanation about the analysis of quantitative and qualitative data..

Analysis of Quantitative Data

In this study, which is a mixed methods research, the "Listening Skills Scale" applied as a pre-test and post-test was used to obtain quantitative data. As a result of the application of the listening skills scale of Yalçın and Özcan (2022) to the control and experimental groups, the data were entered into the SPSS 27 package program and after the validity and reliability analyzes of the data were performed, the kurtosis and skewness coefficients of the obtained data were examined in order to determine which statistics could be used. Since the kurtosis and skewness coefficients obtained were between +/- 1 values, it was determined that they showed a normal distribution. In this respect, parametric tests were applied in the statistics performed.

Analysis of Qualitative Data

The analysis of the qualitative data of the study was obtained by transcripts of the interviews conducted with the students. In order to process the data obtained from the interviews more deeply and discover the themes, content analysis was conducted. The data obtained from the interviews conducted in the content analysis study is interpreted according to the data obtained at the end of the study (Yıldırım, Şimşek, 2008). The interview data transcribed in the study was transferred to the Word program and the analysis was started after the approval of the students. The approved data was processed descriptively by the thesis advisor and the researcher. The data obtained from the interviews were analyzed under the themes of ***digital content increases focus and interest, it is easier to understand with digital content, digital content ensures permanence in learning, digital content improves listening skills, participation in the course becomes easier thanks to digital content, it creates a desire to participate in new activities..***

Validity and Reliability

The capacity of reliable research results to reflect reality has been emphasized by Fraenkel et al. (2012, p. 166). In this study, the answers to the examined questions were examined by three Turkish education experts and one measurement and evaluation expert. The researcher shared the findings regarding the Turkish lesson focused on listening skills taught with digital content with the experts and made arrangements according to their feedback. The method of the research, the characteristics of the examined documents, the reasons for their selection, and the analysis methods have been explained in detail by Creswell & Miller (2000) and Johnson (1997). Transferability, i.e. the applicability of the obtained results in similar situations, has been addressed by Fraenkel and his team (2012, p. 107). The research stages have been examined comprehensively in the relevant sections. Internal reliability tests whether different researchers will reach similar conclusions using the same data set (Fraenkel et al., 2012, p. 165). In this study, the collected data were analyzed comprehensively by the researcher in accordance with the problem situation and the research topic. Internal validity, that is, the steps taken to strengthen the reliability and credibility of the study, are explained in detail during the data collection process. The responses obtained from the participants' interview records are presented with direct quotes in the findings section. The researcher aimed to increase the internal validity of the study by using interviews as a data collection tool. External reliability refers to the detailed consideration of the research process (Fraenkel et al., 2012, p. 103). In this context, the research process is described in detail in the relevant sections and the results were reviewed by three experienced Turkish education experts and two Turkish teachers.

Ethical Approval

Ethical permission (Date: 04.01.2021-Number No: 14) was obtained from the Fırat Üniversity Social and Human Sciences Research Ethics Committee for this research.

Findings

In this section of the study, the findings regarding the pre-test and post-test scores of the experimental and control groups regarding the quantitative data and the findings obtained through semi-structured interview questions regarding the qualitative data and the comments regarding these findings are included.

Findings and Comments on Quantitative Data

Findings and comments regarding the first sub-problem

The results of the independent groups t-test conducted to test the hypothesis that "There is a significant difference between the listening skill scores of the control group and the experimental group in the last application", which is the first sub-problem of the research, are summarized in the table below.

Table 6. *Independent groups t test results between the control group and the experimental group in the post application*

	Groups	N	$\overline{X}$	SS	t	p	Cohen's d
Listening Skill	Control	31	122,80	14,79	-2,186	,033	-,565
	Experimental	29	130,96	14,06			

Sd= 58

As seen in the table above, in the last application, there was a difference between the mean scores of the control group and the experimental group in listening skills ($\bar{x}$ control = 122.80; $\bar{x}$ experimental = 130.96). According to the independent groups t test result conducted to determine whether this difference was significant, the value of t = -2.186 was found and it was seen that this difference was significant ($p < 0.05$). According to this result, it shows that the listening skills of the experimental group students were significantly higher than the control group. Accordingly, it was seen that the digital content application contributed positively to the development of the students' listening skills. In other words, it was revealed that the listening application supported by digital content led to a more successful result than classical listening in the development of the listening skills of the seventh grade middle school students. With the value of Cohen's d = 0.565, it was seen that the data had a medium level of effect power.

Findings and comments regarding the second sub-problem

The results of the dependent groups t-test conducted to test the hypothesis of the second sub-problem of the study, "There is a significant difference between the pre-application and post-application listening skill scores of the control group", are summarized in the table below.

Table 7. *Dependent groups t test results between pre-application and post-application in the control group*

	$\overline{X}$	N	SS	t	t_p	Cohen's d	r	r_p
Pre-application	120,25	31	9,88	-3,228	,003	-,580	,754	,000
Post-application	125,90	31	14,70					

Sd= 30

When the table above is examined, in the light of the data obtained in the pre- and post-application of the control group, differences were observed between the mean scores of the pre- and post-application in the control group ($\bar{x}$ pre=120.25; $\bar{x}$ post=125.90). According to the result of the dependent groups t test conducted to determine whether this difference was significant or not, the value of (t=-3,228) was found and it was seen that this difference was significant according to ($p<0.05$). According to this result, it was seen that the students' post listening skills were significantly higher than their pre listening skills. Thus, it was seen that the practices in the control group improved the listening skills of the students positively. When we looked at the effect power of the data, it was determined that (Cohen's d= 0,580) value had a medium level effect power. According to the correlation analysis (r=0,7549; $p<0,05$), it was concluded that there was a high level relationship between pre-listening skills and post-listening skills. This means that the students who scored high in the pre-practice also scored high in the post-practice. Accordingly, it can be said that the classical application in the control group improved the listening skills of the students. It was determined that there was a significant increase in the listening skills of the students as a result of the 8-week application with the classical method.

Findings and comments regarding the third sub-problem

The results of the dependent groups t-test conducted to test the third sub-problem of the study, "There is a significant difference between the listening skill scores of the experimental group in the pre- and post-application", are summarized in the table below.

Table 8. *Dependent groups t-test results between the pre- and post-application in the experimental group*

	$\overline{X}$	N	SS	t	t_p	Cohen's d	r	r_p
Pre-application	119,82	29	14,63	-4,992	,000	-,927	,650	,000
Post-application	130,96	29	14,06					

Sd= 28

When the table above is examined, a difference was observed in the listening skills scores of the experimental group between the pre and post intervention ($\bar{x}$ pre=119,82; $\bar{x}$ post=130,96). According to the result of the dependent groups t-test conducted to determine whether this difference between the averages was significant or not (t=-4,992) and it was determined that this difference was significant according to the value (tp<0,05). Accordingly, it was concluded that the students' listening skills improved significantly in the post-application of the experimental group. This means that the application in the experimental group significantly increases the listening skills of the students. When Cohen's d value (Cohen's d= 0,927) was examined for the power of this increase, it was seen that it had a very high effect power. This shows that the practices in the experimental group effectively improved the listening skills of the students. At the same time, when the correlation between the pre- and post-application of the experimental group was examined (r=0.65; Rp<0.05), it was seen that the correlation was significantly positive. This positive correlation is an indication that those who scored high in the pre-practice in terms of listening skills scored high in the post-practice, and those who scored low in the pre-practice scored low in the post-practice. Therefore, this correlation shows that the practices in the experimental group positively affected the listening skills of the students. Cohen's d value also supports this result with a high level effect value. These results show us that listening practices in teaching environments contribute to the development of students' listening skills even if they are done with the classical method and support the claim that listening skill is a skill that can be developed. In this context, no matter which method and technique is used, listening practices will contribute to the development of students' listening skills. In addition, the results obtained from the findings also show that digital content applications improve students' listening skills at a rate much higher than classical applications. This situation shows that students are prone to digital elements and that they give more positive feedback to trainings with elements they are not unfamiliar with.

Findings and Comments on Qualitative Data

Findings Regarding Qualitative Data

Digital content increases focus and attention

The participants' statements about the impact of digital content on the educational process show that such content significantly improves students' learning experiences. Digital content includes visual and audio elements that attract students' attention, allowing them to be more focused and attentive. Visual supports in particular help students understand and remember information more easily, and they also help increase students' motivation and interest by adding innovation and variety to the educational process. Participant statements (n=7) supporting these findings are given below;

"These digital contents taught me to listen more easily, I learned to focus more, I became more motivated while listening... The reason we learned these in class may be that, for example, it enabled us to focus more, to extract more from it, to understand, to hear with understanding, to work with understanding." (Azra)

"*Yes, because it was more... I was interested in it, I felt a desire to listen to it more, to see it more. Well, it contributed... It increased my focus, yes.*" (Hamza)

"*I couldn't focus much before because there were no visuals, but... it got better with listening because there were visuals.*" (Belinay)

"*I listened to it seeing it as a human being, my focus increased.*" (Beren)

"*I am more attentive with visual content, my interest has increased.*" (Nisa)

"*Studies done in a digital environment are always fun and more interesting in my opinion because we always come across them in books, but when some teachers explain them with support explanations like boards, it is good. Technology is a little more fun.*" (Eylül)

"*When there are pictures, my interest increases a little more... I am more attentive..*" (Enes)

It's easier to understand with digital content

The contributions of digital content to the learning process are clearly understood from the participants' statements. Participants emphasize that digital content provides easier and more effective understanding. Participants also state

that they understand themselves and others better and communicate more effectively. Participants' statements supporting these findings (n=8) are given below;

"*Watching digital content, in other words doing it visually, helps us much more than listening, we understand it more that way and it becomes more useful.*." (Hamza)

"*The reason why we learn these things in class is that it may have helped us to focus more, to get more out of it, to understand, to hear with understanding, to work with understanding. Digital content helped me to listen, to understand well; it helped us to understand more; it helped me to extract the main idea, the main feeling*" (Azra)

"*I learned that it was more useful for the lesson, I could listen to the lesson better and it helped me understand the lesson better. ... It is easier to understand because we see emotions, expressions and gestures in the visuals.*." (Beren)

"*When I was listening to it, it didn't stick in my mind, but when I was watching it, I started to understand it more, it started to stick more*." (Belinay)

"...it helped us understand more by enriching it both visually and through sound.." (Ali Ekber)

"Mmm, helped me understand the lesson better, and I also got to know the scientists in the texts better. ... I understood the lesson better, I could answer the questions better. Actually, I understood the text better when I listened and watched like this..." (Emine)

"*I learned that our imagination can work faster and produce more content in a digital event with visuals. This makes it easier for me to understand.* " (Enes)

"*It helps people understand more easily and comfortably as it comes to life in the human eye while it is being created as an image.*." (Tuana)

Digital content ensures permanence in learning

Based on the participants' statements, the effect of learning with digital content on retention is seen. Digital content combines visual and auditory elements, making the learning process more effective and permanent. Participants emphasize that visual elements play an important role in understanding and remembering. The integrated use of visual and auditory elements enriches students' learning processes and allows information to remain in long-term memory. Participant statements supporting these findings are given below;

"*If it weren't for the visual, I wouldn't be able to remember anything... Thanks to the visual, some things came to my mind and I was able to answer the questions there. When we process the lesson with digital content, the questions become easier and stay in our minds faster when we watch rather than read .*" (Hamza)

"*Watching was also more useful, when we watch it, it stays in our minds more, but when we listen to it, it stays in our minds more in pieces. When we listen to it, as I said, most things can slip our minds, that's why we have difficulty finding the main idea, we can have difficulty answering, but when we watch it, it stays in our minds more, I think it's better and more effective by seeing.*" (Nisa)

"*When we use more than one of our visual, auditory and even five senses, it becomes more memorable and enjoyable. As a result of these digital activities, I learned to reinforce what I learned, to listen and watch more carefully, and I observed that it is remembered better when I reinforce it with visuals, (pauses) not just audio. It became more memorable because it was remembered more visually.*." (Eylül)

"*I didn't remember anything while listening to it, but it became more memorable while watching it*." (Belinay)

"*It is explained better, I mean better, more than reading a book, I mean there are visuals, we can remember some things from the visuals*." (Ali Ekber)

"*Mmm, because it is a bit more visual with digital content, it is more memorable because it stays in my mind visually; I think both are better together because it supports it with audio, like not forgetting memories in events all the time.*." (Emine)

"*Well, when... when... when you listen to the sound, it's even more like this, uh, when it's illustrated, it's like this, or rather, you understand it even more, I mean when you see the picture, but without the picture, it's a bit like this, you can't understand it much, it just stays in your mind a little... but when you listen to the sound with the picture... I mean, with pictures, it stays in our minds even more like this. With animations, it can stay in my mind even more like this."* (Enes)

Digital content improves listening skills

Learning with digital content makes significant contributions to students in areas such as improving listening skills, increasing attention and perception, effective use of visual and auditory elements, self-assessment and content comprehension. In this way, students make more meaning from the information they listen to and learn more effectively. Audio-visual elements in digital content help students to understand information better and listen more effectively. Participant statements (n=8) supporting these findings are given below;

"*Digital content helped me to listen, to understand well; it helped us to understand more; it helped me to extract the main idea, the main feeling*." (Azra)

"*I think it had beneficial results, our attention skills improved and our hearing and auditory skills got better.*" (Nisa)

"*It made me listen and see better; it made me listen and see some people better*." (Ali Ekber)

"*It has improved my listening skills... the way I understand things has also improved*." (Enes)

"*I think it has an impact on listening skills; I compare myself, 'Can I listen to this?'*." (Tuana)

Digital content facilitates class participation

Dijital içerikler sayesinde öğrenciler, dersi daha iyi anladıklarını ve ders katılımlarında artış olduğunu belirtmişlerdir. Bu artış, öğrencilerin derslerde daha etkileşimli olmalarını ve sorulara daha etkin bir şekilde cevap vermelerini sağlamaktadır. Dijital içerikler, öğrencilerin ders materyallerini daha iyi anlamalarını sağlayarak, derslere daha aktif katılımlarına olan tanımaktadır. Bu bulguları destekleyen katılımcı ifadelerine (n=6) aşağıda yer verilmiştir;

"*I listened to my teacher better, made more eye contact... I saw an increase in my class participation*." (Tuana)

"*when I could answer the questions, I participated in the class more. Because, as I said, I could participate in the class better. Thus, my oral grades would also increase.*" (Sena)

"*I have seen an increase in understanding and participation in the lesson, I remember it better, I think it is better and more effective by seeing it.*" (Nisa)

"*I was able to answer your questions too.*." (Ali Ekber)

"*Yes, the classes became more enjoyable and everyone's participation increased*." (Hamza)

"*Digital content helped me to listen, to understand well; it enabled us to participate more; it helped me to extract the main idea, the main feeling*." (Emine)

Creates a desire to participate in new activities

Participants express their satisfaction with digital content activities and their positive attitudes towards such activities. Participant statements show that participants want to participate in new digital content and trainings. Student statements supporting these findings are given below;

"*Of course I will join because these are starting to seem very interesting to me.*" (Azra)

"*…if something new is done, I would like to participate.* " (Belinay)

"*Yes, I would like to participate... it helps me learn some things and makes me more interested*." (Emine)

"*My interest in such things may increase even more, I will participate.*." (Enes)

"*It is better to do new things and discover new things.*" (Hamza)

"*More self-confidence and courage goes into this, yes I would like it, yes*." (Tuana)

"*I would like to participate because I know that it is a more productive, more pleasant purpose for our learning.*" (Beren)

"*It's not like a dream, but why not design digital content according to emotions and ideas, for example, if you think of something, why not open it accordingly, so it's a good idea*." (Eylül)

Discussion, Conclusion and Recommendations

In this section, discussion, conclusions and recommendations are given in the light of the quantitative and qualitative data obtained as a result of the research.

In this study, which is a mixed method research, the results of quantitative and qualitative data and the results of the measurement tools used to obtain quantitative and qualitative data are examined under separate headings.

Results and Discussion of Quantitative Data

Statistical analyses were conducted to determine whether there was a significant difference between the control and experimental group listening skills scale pre and post-test scores and between the control group pre and post-test scores and the experimental group pre and post-test scores.

Conclusion and discussion on the first sub-problem

Although there was a significant difference between the control group and the experimental group in the first sub-problem related to whether there was a significant difference between the scores of the listening skill scale in the control group and the experimental group in the pre-application, the analysis led us to the conclusion that this difference was not meaningful. Accordingly, we can say that the students in the experimental and control groups were at a similar level in terms of listening skills at the beginning. These results can be accepted as an indication that the data emerging in the experimental and control groups at the end of the application were not caused by a negative effect arising from student levels.

Conclusion and discussion on the second sub-problem

The results related to the second sub-problem, which examined the difference between the control group and the experimental group listening skill scale scores in the post-application, showed that there was a difference between the two groups and this difference was meaningful. According to these results, digital content applications to the experimental group students contributed positively to their listening skills. Compared to the control group where a classical listening and listening activity was applied, a significant increase in the development of listening skills was found in the experimental group where listening and listening activities enriched with digital content were applied. This situation shows that although classical applications contributed to the development of students' listening skills, they did not have as significant an effect as digital content applications, and that different applications such as applications supported by digital elements should be included for the development of the skill. The difference between the two groups, which were found to be at the same level at the beginning, shows that new methods and techniques should be employed, that students have different expectations in learning environments, and that old approaches do not contribute to new generation students at the desired level.

Conclusion and discussion on the third sub-problem

The application related to the third sub-problem shows that there is a difference between the pre- and post-application listening skill scores of the control group, and the analysis shows that this difference is meaningful. This result indicates that the classical listening practices also improved the students' listening skills. The determining factor here is the strength of the increase in skill development. The power of effect analysis of the data shows that there is a moderate effect. This result, although the method of the training is important, is a valuable data in terms of showing that students' skills improve to a certain extent under all circumstances when it comes to training. In addition, the analysis shows that the students' skill levels increased in proportion to their initial skill levels, and that the students who scored high in the pre-application also scored high in the post-application.

Conclusion and discussion on the fourth sub-problem

The results of the fourth sub-problem, which examined the difference between the experimental group's pre- and post-application listening skills scores, indicate that there is a meaningful difference between the experimental group's pre- and post-application listening skills scores. The results of the application show that the applications significantly increased the listening skills of the students. In addition, the power of effect analyses are also important in terms of showing that this increase in listening skills has a very high power of effect. Besides, the skill levels of the students in the pre-application were maintained in the post-application and the increases were parallel in this respect.

All these results show that listening practices, which have been applied from past to present, create an effect on the student for the development of the skill and improve the student's listening skills. However, listening practices enriched with digital content led to a high level of development in contrast to previous methods. These results obtained are an indication that formal or informal learning and teaching processes have to adapt to the opportunities offered by digital technology (Yazar, 2019) due to the impact of digital life on all learning tools in this century, and that practices suitable for the requirements of the age should be substituted rather than classical methods in order to develop skills at the desired level. In the studies, it is stated that smart boards, which offer a media environment, contribute positively to listening education with new content, and even just combining visual and auditory elements (Tanrıkulu, 2017) is seen as a positive development for students' listening skills. In addition, in the studies examined, it was also determined that multimedia applications in the poetry genre were effective in improving students' listening comprehension skills for the text (Dedebali, 2014), and digital content elements such as video contributed positively to students' language learning, students' listening skills and improved their language skills (Woottipong, 2014). In a simpler approach, Mayer & Moreno (2002) stated that words and pictures are better than words alone to support students' comprehension and emphasized the importance of engaging multiple senses. In a study on the effectiveness of animations in the context of digital content (M & Tyagi, 2018), it was reported that the use of animation improves academic performance at the primary level, even in developing countries; animation is a unique combination of auditory and visual elements in the transmission of messages, and education through multiple channels makes the communication process effective even for students from different socio-economic backgrounds. In a study by Woottipong (2014), which examined the effect of using video materials, it was concluded that listening instruction using authentic video material improved students' listening comprehension skills due to the combination of visual images and sound that stimulated students' perceptions.

Conclusion and Discussion on Qualitative Data

Conclusion and Discussion on the Findings Obtained From the Interviews

Digital content increases focus and interest

Developments in technology have created some changes in communication methods and communication environments. Education also needs to keep up with this change and update itself. In light of the findings, it is concluded that digital content, which includes visual and auditory elements, increases students' interest in the lesson and helps them focus, compared to the limited interaction in traditional methods. Making environments prepared by using educational technology more sensory environments increases student motivation (Akkoyunlu & Yılmaz, 2005). In his study on early reading and writing skills, Soyuçok and Kartal (2017) also mentioned that motivation and desire will increase in students who are introduced to the right software and digital resources, but designs that do not meet the needs of learners will affect the student in the opposite direction. Öztürk also concluded in his study in 2019 that interest in the lesson increases with digital content. Hennessy et al., (2007) stated that the motivating effect on the learner is easily observed when realistic applications are used. When the literature is examined, it is seen that the use of technological elements as course materials increases not only the students but also the motivation of teachers and teacher candidates. In this direction, Gaffney (2010) mentioned in his study the positive effect of teachers who have digital usage competence in incorporating digital curriculum resources into their own courses on students and teachers. Tekinarslan et al. (2015), who conducted research on teacher candidates, concluded that digital content has a positive effect on the contribution to learning and interest-motivation sub-dimensions. In addition, there are many studies in the literature indicating that digital use increases interest and motivation (Alkan 2011, Baran 2010, Çaka 2018, Yıldırım 2018, Öztürk 2019).

It's easier to understand with digital content

Educational technology, which is the result of the integration of technology and education, provides students with great convenience in reaching the desired outcomes by providing interactive and active learning environments in the teaching of the four basic language skills. The findings of the study in question are in line with this and are similar to many studies in the literature. Baran (2010) concluded with his study in primary schools that abstract concepts are concretized and students' understanding becomes easier with the use of interactive smart boards. It is seen in Keçeci's (2018) study that digital content has a positive effect on topics that students find boring and have difficulty understanding. Another study that concluded that multimedia applications make children's understanding easier belongs to Akın (2015). Ciğerci (2015), who measured children's listening skills with activities based on digital stories, revealed that this method created a significant difference in the ability to understand what they listened to. Similar to the study in question, Karasakaloğlu & Bulut (2012), who statistically demonstrated that listening texts should be supported with visual elements, compared traditional methods with digital methods and reached the positive effect of digital use on learning. Şahin (2015) conducted a similar study on short films and reached data supporting the results of the research. Sejdiu (2017) also thinks that multimedia appealing to both the eye and the ear has a positive effect on listening-based learning and facilitates comprehension. In their study on the listening skills of 6th grade students, Dedebali & Saracaloğlu (2017) revealed that the listening comprehension score of the experimental group created a significant difference in digital use. When the literature is examined, it is seen that there are many studies supporting the result of the study (Arono 2014, Safranj 2015).

Digital content ensures permanence in learning

Interface applications developed with digital content increase students' interest and motivation in the lesson and facilitate the permanence of the skill. The results of the study indicate that when digital content is used in educational environments for its intended purpose, the focus on the lesson will increase, learning will be enriched and permanence will increase (Alkan, 2011). In the study investigating the effect of digital resources on language learning of prospective teachers, Kartal (2010) also reached the conclusion that learning is more effective and permanent. Akın (2015) tried to determine the permanence of students in listening comprehension and reached the conclusion that teaching with multimedia applications increases permanence. Şahin (2015) also stated that visual and auditory elements provide permanence, supporting the findings of the study. In Woottipong's (2014) study evaluating listening skills through video, it is seen that students use the information they acquire for a long time. Tsou et al., (2006) established a website where multimedia-supported stories were told and examined the effect of multimedia-supported videos on recall and concluded that it significantly facilitated retention. The study by Debebali & Saracaloğlu (2017) shows that digital content has a positive effect on retention as well as on listening comprehension in the experimental group. When the literature is examined, it is possible to see results supporting the research in question in similar studies conducted in different disciplines and in the same field (Yılmaz & Özgür 2012, Kert & Tekdal 2004, Öksüz & Ak 2009).

Digital content improves listening skills

Visual and auditory elements in digital content help to understand information better and listen more effectively. It is seen that listening, especially among the four basic language skills, is ignored because it is more abstract than other skills and is considered an innate skill like speaking (Çiftçi 2001). It is necessary to try different ways to reach the gains of listening skills and develop this skill in students. Because studies show that an individual spends 42% of the time he/she is with people listening (Tuncer, 2008). Since listening is a communication element that is significantly affected by psychological and social factors, many factors such as the visuality of the message source, how the communication tool is used, and the purpose for which it is listened to can change the quality of listening (Çiftçi 2001). At this point, the study reveals the positive effect of digital content on this skill. In line with the findings of the study, teachers in Karoğlu's (2015) study concluded that digital storytelling is beneficial for students' language development. In the study conducted by Gümüş (2019), it was concluded that student groups who were applied to listening texts with audio and visual stimuli were more successful. Again, when the data of this study are examined, it is seen that audio and visual supported materials directly contribute to listening skills and indirectly to the development of other language skills.

When the literature is examined, there are also studies that reach the opposite conclusions. Çiftçi et al. (2013) stated that digital content has many benefits for students, but it will have a negative effect on students' reading, writing, listening and speaking skills..

Digital content facilitates class participation

Students who need to answer text-based questions after listening activities can be more active in the lesson because they understand the text better with digital content. As interaction with the lesson increases, listening comprehension increases and enables them to answer questions effectively. Chen et al. (2011) integrated many gains into digital learning content in their studies and determined that students' participation in the lesson increased. Kılıç (2013) similarly mentions the positive effects of digital content on students' active participation in the lesson. Rudd et al. (2009) determined in their research that teachers believe that digital content provides more participation from learners. Öztürk (2019) also stated in his study that digital content increases participation, but criticizes the point that it directs students to individual learning rather than collaborative learning.

Creates a desire to participate in new activities

The positive effect and satisfaction that digital content evokes in students increases their desire to participate in new digital content. Students who see that they understand more easily and that their interest and motivation towards the course increase, request different activities in this direction. When we look at new generation approaches, we see that methods that support the student's individual learning process, stimulate the student's desire to learn, and appeal to more sensory organs are more effective. Digital content positively motivates students towards new activities on digital platforms as it contains the features that such approaches are based on.

Conclusion and Recommendations

This section includes the results and recommendations of the research.

Recommendations

The results of this study, which measured the effect of digital content on listening skills in secondary school Turkish teaching, are as follows:

• There is no significant difference between the pre-test scores of the students in the experimental and control groups on the listening skill scale. This result shows that the students in both groups were at a similar level in terms of listening skills before the application.

• There was a significant difference in favor of the experimental group between the listening skill scale scores of the students in the experimental and control groups on the post-test application. Accordingly, the listening practices enriched with digital content positively affected the students' listening skill scores.

• There is a significant increase between the pre-test and post-test scores of the listening skill scale applied to the control group. Accordingly, the listening practices that were not innovative and were carried out with classical methods, although not very strong, positively improve the students' listening skills.

• A significant difference was found between the pre-application and post-application listening skill scale scores of the experimental group. This difference shows that the experimental process positively improved the listening skills of the students in the experimental group.

• As a result of the data obtained from the interviews, it was determined that digital content practices increased focus and interest.

• The data obtained from the interviews show that listening practices enriched with digital content facilitate comprehension.

• As a result of the data obtained from the interviews, it was seen that digital content applications in listening skills ensure permanence in learning.
• As a result of the interviews, the data obtained reveal that digital content applications improve listening skills.
• According to the results of the data obtained from the interviews, listening applications enriched with digital content facilitate participation in the lesson.
• As a result of the data obtained from the interviews, it was seen that digital content applications create a desire to participate in new activities.

Recommendations
Based on the results obtained from the research, recommendations for educators, institutions and researchers are as follows:

Recommendations for Educators
• Considering that listening is a skill that is the basis of learning and can be developed, it is suggested that different listening applications (news and weather bulletins, announcements, directions, advertisements, etc.) should be used for this development.
• Since presenting listening texts to students only in the form of an audio file has a limited effect on the development of the skill, the use of listening content enriched with visual elements can be recommended.
• Since the current listening practices are far from attracting the interest of today's students, the use of listening practices enriched with digital elements is recommended.
• Teachers can be recommended to do different listening activities without depending on the textbook.
• In the textbooks, listening skill acquisitions are included only through listening texts. As such, listening skill is isolated. Since both listening and other language skills complement each other, it is recommended that language skills be given to students in a mixed manner.

Recommendations for Institutions
• Since developing digital content and integrating it into listening practices may not be the same challenge for every teacher, it is suggested that digital listening content should be provided ready-made with the textbook.
• In-service trainings can be organized to improve in-service teachers' perceptions of listening skills and their competencies in teaching listening skills.
• Considering the existing number of listening skill acquisitions, it can be suggested to increase the number of listening acquisitions for the development of the skill and, in parallel, to increase the number of listening texts and activities in the textbook.
• Considering that digitalized listening activities attract students' attention and they participate more actively in the lesson with the applications made on the smart board, it is recommended that the activities should also be transferred to digital.
• Listening texts are difficult for students to perceive. The fact that the words in the texts consist of words that students have not encountered before will lead to interruption of listening. In this respect, listening texts should be selected from current texts as much as possible and texts in which the words belonging to today's Turkish should be used.
• Listening activities that students can access on EBA should be included.

Recommendations for Researchers
• Since the research covers students in the 7th grade level of secondary school, it is recommended that further research be conducted with students in other age groups and grade levels.
• This research was conducted in Elazığ province. Studies covering different provinces can be conducted.
• In the literature, studies investigating the effect of digital content on listening skills are very limited. For this reason, different studies can be conducted to measure the effect of digital content on listening skills.

Author (s) Contribution Rate
Authors contributed equally.

Conflicts of Interest
There are not any potential conflicts of interest.

Ethical Approval
Ethical permission (Date: 04.01.2021-Number No: 14) was obtained from the Fırat Üniversity Social and Human Sciences Research Ethics Committee for this research.

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The Perceptions of Educational Administrators towards Digital Leadership in the Age of Artificial Intelligence: A Qualitative Study

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Abstract
Artificial intelligence technologies are used in many fields and have become a part of our lives. The field of artificial intelligence, which has an important place, especially in the field of education and digital leadership, is constantly developing and is expected to create even greater impacts in the future. The main purpose of this research is to examine the perception of educational administrators towards digital leadership in the age of artificial intelligence. In the research, phenomenological design, one of the qualitative research methods, was used. The study group was comprised of 15 educational administrators. These participants were selected using maximum sampling method, derived from purposive sampling methods. In the study, a semi-structured interview form created by the researchers by analyzing the literature in detail and taking expert opinions was used as a data collection tool. Descriptive and content analysis was used to analyze the data. According to the results of the research, the themes of general perceptions of educational administrators towards artificial intelligence, perceptions on the use of artificial intelligence in education, general perceptions of digital leadership, and suggestions for educational administrators towards artificial intelligence and digital leadership emerged.

Keywords: Artificial ıntelligence, Digital leadership, Education managers, Education.

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Introduction

Edward Fredkin posits three pivotal events in history: the creation of the universe, the advent of life, and the rise of artificial intelligence (AI). This assertion underscores the vast potential and scope of AI, hinting at its potential advancement beyond current imaginings. It is evident that this swiftly progressing technology significantly augments education across various dimensions and holds the promise of greatly accelerating the resolution of challenges encountered in the teaching process (Arslan, 2020).

Intelligence represents the computational facet of achieving objectives. Across humans, animals, and specific machines, varying levels and forms of intelligence manifest. AI constitutes a scientific and engineering domain dedicated to crafting intelligent machines, particularly sophisticated computer programs. While comprehending human intelligence remains intertwined with computer utilization, AI possesses the capacity to evolve beyond biological constraints (McCarthy, 2004).

The initial strides into AI were made in 1943 by McCullotch and Pitts (1943) through the 'Brain Boolean Circuit Model.' This model aimed to mathematically elucidate the functioning of neurons in the brain based on certain postulations. In contemporary times, AI has become notably pervasive, finding effective applications across various domains such as banking, technology, and entertainment (Elmas, 2007). Presently, numerous AI systems, encompassing personal assistants like 'Siri,' game theories, language translations, intelligent education management systems, virtual classrooms, hand-face-image recognition systems, automation, and robotic tracking systems, have become integrated into our daily lives (Arslan, 2020). The developmental trajectory of AI is outlined in Figure 1.

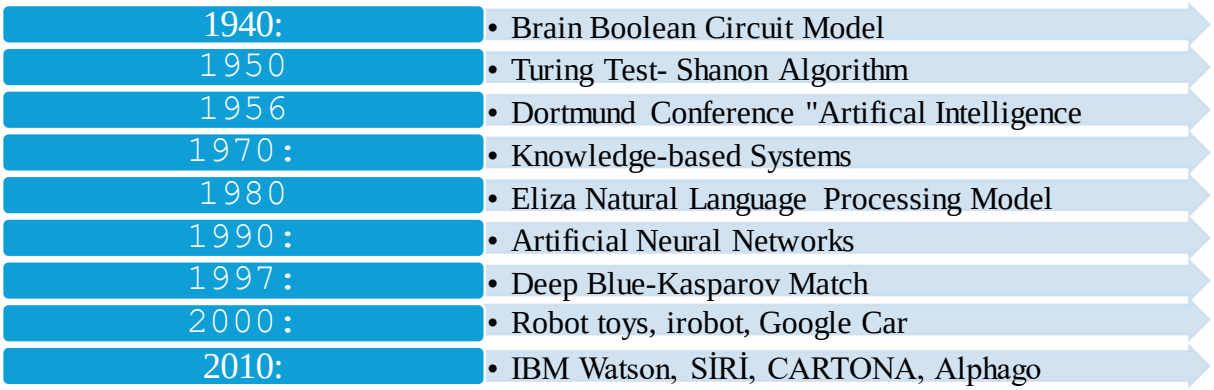

Figure 1. Development Process of AI (Source: Tigre et al., 2022)

According to Baker and Smith (2019), AI serves as a comprehensive term encompassing various technologies and methodologies, including machine learning, natural language processing, data mining, neural networks, or algorithms. These elements execute cognitive tasks typically associated with human cognition, particularly in learning and problem-solving contexts. Regarding the replication of human intelligence in computers, while experts posit its feasibility, it is widely acknowledged as notably challenging to encompass the entirety of human cognitive abilities. This challenge arises due to the multitude of intricate features inherent in the human brain, posing significant complexities in adaptation (McCarthy, 2004).

From these perspectives, AI can be delineated as the utilization of high-level human cognitive abilities by computers, encompassing skills like inference, reasoning, problem-solving, and generalization. Moreover, AI can be perceived as intelligent programming prompting humanoid reactions (Arslan, 2020). According to Nilsson (1990), a prominent figure in AI literature, AI is conceived as an emulation of natural intelligence.

AI's adaptability and extensive range of applications are positioning it as a general-purpose technology, poised to exert significant influence across diverse sectors, fundamentally reshaping value chains and business models (McKinsey Global Institute, 2017). Presently, AI is predominantly characterized as narrow AI, focusing on systems adept at performing specific and specialized intelligent tasks, while the feasibility of achieving general AI remains uncertain. Despite the general AI takeover being considered an outlier or a distant prospect by most AI experts, the integration of narrow AI into business and society raises substantial social and ethical considerations. The proliferation of narrow AI systems, capable of autonomous action and broader utilization, has brought critical issues to the forefront of AI policy agendas. Concerns regarding flawed decision-making, biases leading to discrimination, job displacement, and the potential for malicious AI applications (cyber-conflicts) are increasingly prominent. These considerations highlight the pressing need for ethical frameworks and regulations to guide the responsible development and deployment of AI Technologies (European Group on Ethics in Science and New Technologies, 2017).

AI is anticipated to catalyze the onset of the 'Fourth Industrial Revolution,' placing AI advancements at the forefront of the global policy discourse. Policymakers worldwide are progressively acknowledging that securing leadership in AI confers technological, economic, and security advantages to the leading nation. Consequently, there is a burgeoning competition between China and the US to assert dominance in the realm of Big Data, recognized as the foundational resource driving AI innovations (Delponte and Tamburrini, 2018).

In recent years, there has been a burgeoning interest in the realm of AI, notably concerning the role of managers amidst this transformative technological landscape (Brock and Von Wangenheim, 2019). AI stands as a concept wielding transformative potential for humanity heralded as an unparalleled technology. Noteworthy investments from private enterprises, such as Google's acquisition of the European AI startup DeepMind for $400 million, alongside collaborative initiatives like the German Artificial Intelligence Research Center (DFKI), portend a forthcoming significant impact on higher education institutions (Popenici and Kerr, 2017). Illustratively, the Technical University of Eindhoven in the Netherlands recently unveiled plans to inaugurate an Institute for Artificial Intelligence Systems, earmarking 50 new professorships dedicated to AI-focused teaching and research (Roll and Wylie, 2016). This circumstance underscores the increasing significance of education, emphasizing its heightened importance in the evolving landscape.

The inception of AI in education is traced back to the ideas proposed by Sidney L. Pressey in the early 20th century, around 1920, during his tenure at Ohio University. Pressey posited that leveraging multiple-choice tests could serve not only as an assessment tool but also as a means to enhance student achievement by employing the principle of immediate feedback, aligned with Edward Thorndike's law of influence (Thorndike, 1927), to reinforce learning. Pressey (1950) envisioned machines capable of facilitating learning by providing students with instant test results and guiding them toward correct answers. Moreover, Pressey (1950) contended that such systems would not only support student learning but also alleviate the workload of educators. Consequently, teachers would be able to create an environment conducive to spending more quality time with their students.

The integration of 21st-century skills (Trilling and Fadel, 2009) and the implementation of the Next Generation Science Standards (NGSS, 2013) have underscored the significance of broader learning skills and competencies, such as metacognition, critical thinking, and collaboration. Consequently, contemporary educational frameworks and theories endeavor to integrate authentic practices involving complex challenges within collaborative environments. The realm of AI in education must adapt to these shifts to sustain its current efficacy and augment its impact. These evolutions in education also present an opportunity for growth (Collins and Halverson, 2010). Nonetheless, numerous traditional classroom structures prove inadequate in engaging students with significant challenges (Kirschner et al., 2006; Tobias and Duffy, 2009) or allowing for student autonomy (Collins and Halverson, 2010). Both students and educators require enhanced, tailored support. In traditional educational paradigms, teachers were not expected to possess all-encompassing knowledge and simply transfer it to students. Conversely, in AI-integrated education, teachers are tasked with facilitating students' abilities to search, acquire, and synthesize information independently while fostering collaborative and critical thinking skills (Roll and Wylie, 2016).

AI within various fields is commonly evaluated through three distinct paradigms: data-based, logic-based, and knowledge-based approaches. Between 1980 and 2000, the emphasis on AI, specifically in the realm of education, was predominantly on a knowledge-based framework (Sleeman and Brown, 1982). In this period, the primary focus revolved around the development of intelligent teaching systems comprising modules that encompassed the domain, which denotes the specific area of learning, the student's knowledge and learning context, and pedagogical elements aiming for an adaptive and interactive interface (Woolf, 2009). Examining contemporary AI studies in education reveals a notable shift encompassing not only knowledge-based methodologies but also data and logic-based approaches. These contemporary applications extend beyond mere support for learning processes, encompassing diverse functionalities such as child-robot interactions, article analysis, and AI-driven evaluation systems. Additionally, these applications transcend the realm of learning support to encompass management-related aspects within schools and universities, including curriculum development, personnel programs, and cyber security measures (Holmes et al., 2019).

The utilization of AI in education has emerged as a focal point not only for educators but also for the leadership and digital strategists within educational institutions. In the contemporary era, digital transformation stands as a crucial imperative for organizations (Inel, 2019). Technological advancements have brought about profound shifts, prompting organizations to reconsider their operational methodologies and leadership paradigms (Schwarzmüller et al., 2018). The ascendancy of digital technologies has accentuated the necessity to explore the role of leadership, complicating the landscape further with the integration of digital technologies into leadership studies (Inel, 2019). Vial (2019) articulates digital transformation as "a process aimed at enhancing an entity by instigating substantial changes in its attributes through the amalgamation of information, information processing, communication, and connectivity technologies". Nonetheless, the linchpin of this digital revolution remains skilled human resources (Hanna, 2018). Simultaneously, recent scholarly investigations have delved into scrutinizing the impact of digital transformation on organizational dynamics (Peter et al., 2020).

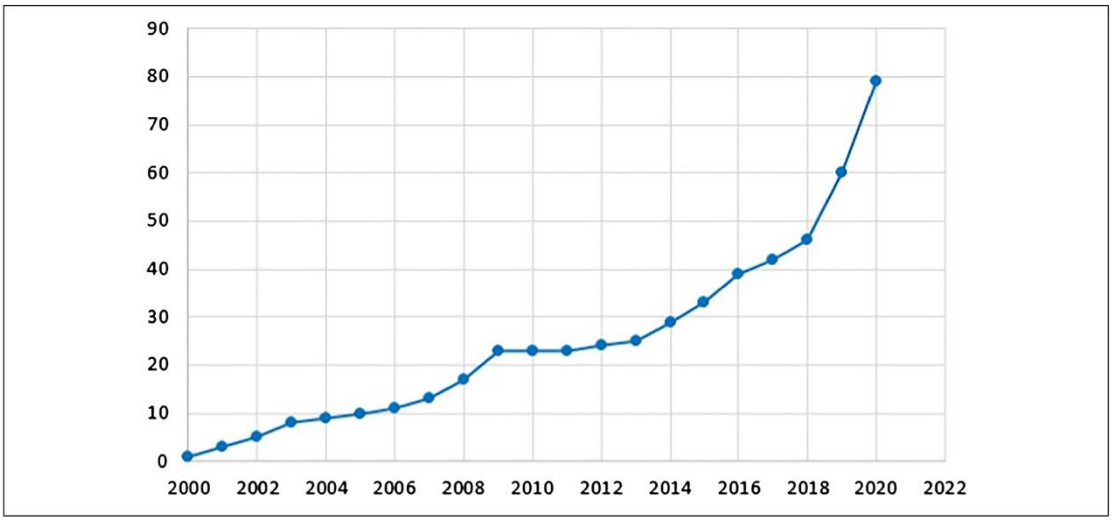

Figure 2. Cumulative Increase in Research (Tigre et al.)

The surge in virtual environments within technological organizations has underscored the pivotal role of leadership skills in shaping the efficacy of virtual entities (Ziek and Smulowitz, 2014). Within the literature, a delineation of ten essential traits characterizes successful digital leaders amidst the landscape of digital transformation. These attributes encompass vision, digital literacy, customer-centricity, agility, collaboration, risk-taking, fostering trust, motivation, innovation, and personalized assessment. Central to the dynamics of digital transformation is the imperative for top-tier management to provide a clear vision (Fitzgerald et al., 2014; Eberl and Drews, 2021). Digital leaders, leveraging their acumen in digital knowledge and literacy, play a crucial role in cultivating a digital mindset across the entire organization. This mindset equips the organization to adeptly respond to disruptive technologies (Hansen et al., 2011). The evolution of the digital landscape has significantly altered customer behavior and expectations, indirectly compelling organizations to reinvent themselves in order to attract and retain customers (von Leipzig et al., 2017).

The advent of the digital revolution has notably enhanced the agility of businesses. In assessing prosperous technology enterprises, the prevailing competitive landscape has necessitated greater flexibility and adaptability in company strategies (Akkaya and Tabak, 2020). While possessing digital skills is imperative, leadership in driving digital transformation demands a fusion of soft skills among digital leaders to effectively align with transformative initiatives (Promsri, 2019). The presence of diversity among employees places added responsibility on leaders to bridge various teams and operational systems. This encompasses fostering digital collaboration across borders, a crucial facet in steering a successful digital transformation journey (Promsri, 2019). Within this landscape, every decision undertaken by digital leaders carries inherent risk, making adept risk management pivotal to circumvent failures during digital transformation processes (Temelkova, 2018). Strategic decision-making in digital transformation requires leaders to calculate risks judiciously, acknowledging the inevitability of errors. Nevertheless, these risks remain instrumental in propelling digital transformation strategies forward (Promsri, 2019).

Trust emerges as a cornerstone of effective digital leadership. Leaders are expected not only to set an exemplary precedent but also to embody moral and ethical behaviors, pivotal in cultivating trust within their teams and organizations (Qian and Papadonikolaki, 2020). The imperative for leaders to inspire, motivate, and instill a sense of vision and purpose has long been acknowledged as fundamental to effective leadership. In the realm of digital leadership, this facet has arguably become increasingly crucial, given the accelerated pace of business growth amid heightened strategic uncertainty. Consequently, leaders are challenged to furnish their teams with a clear vision, robust strategy, and foresight (Morgan and Papadonikolaki, 2022).

Innovation stands as a pivotal pillar within the domain of digital leadership. The inception, management, and scaling of digital innovations constitute indispensable strides toward realizing their inherent value. Risk, an intrinsic element of any innovation endeavor, whether digital or otherwise, requires adept leadership support. This support is instrumental in fostering an environment conducive to innovation, particularly in establishing the psychological safety necessary for teams and individuals to embrace risk-taking and experimentation (Edmondson, 1999).

Leaders leverage individualized assessments as a strategic tool to coach, facilitate, instruct, mentor, and foster knowledge transfer while actively engaging with the developmental needs and untapped potential of their colleagues. In the expansive landscape of digitalization, which transcends geographical borders and is dispersed

across diverse disciplines (Nambisan et al., 2017), the necessity for robust two-way communication and feedback mechanisms becomes pivotal. In this context, digital leaders assume the role of boundary spanners, traversing knowledge boundaries and actively supporting the transfer of knowledge (Levina et al., 2006).

The utilization of individualized assessments enables leaders to tailor their approaches, offering personalized guidance and support to team members. This multifaceted engagement encompasses coaching individuals toward skill enhancement, facilitating seamless knowledge dissemination, and fostering a culture conducive to continual learning and development. Additionally, in the realm of digital leadership, the landscape's inherent dynamism demands leaders to adeptly navigate knowledge silos, facilitating the exchange of expertise and insights across diverse domains to drive innovation and organizational growth. this study aims to delve into the general perceptions of educational administrators concerning AI, their views on its application in education, their understanding of digital leadership, and their suggestions for effective digital leadership within the context of AI.

Digital Leadership in the Age of Artificial Intelligence

Effective leadership, irrespective of historical context, demands a distinct set of competencies and behaviors aligned with the prevailing demands of the era. Diverse economic landscapes, technological advancements, cultural nuances, and shifting societal values necessitate adaptive leadership approaches. The current surge of industry disruption finds its impetus in digital tools, technologies, and evolving business models, encompassing analytics, virtual reality, blockchain, cloud environments, mobile solutions, machine learning, interconnected devices, the sharing economy, and digital ecosystems. These digital innovations serve as catalysts, accelerating the pace of change and presenting formidable challenges for leaders in establishing and maintaining competitive advantage (Neubauer et al., 2017).

The landscape of leadership, in light of these rapid digital transformations, demands a keen understanding of the dynamic interplay between technological advancements and business strategies. Leaders are tasked not only with navigating the complexities introduced by these innovations but also with fostering an organizational culture that embraces agility, continual learning, and adaptability. This dynamic environment calls for leaders capable of orchestrating change, harnessing the potential of digital tools, and steering their organizations toward sustained relevance and success amidst evolving industry paradigms. In an era marked by rapid change, acknowledging one's limitations and recognizing the value of understanding what is unknown can hold as much significance as grasping what is known. Regrettably, leaders often encounter barriers to learning about new developments due to the sheer volume and diverse array of information within an organization's ecosystem. The imperative for leaders lies in fostering an openness to learning, actively seeking input from both internal and external sources, and acknowledging that others may possess insights beyond their own. The research underscores the crucial role of leadership humility, showcasing its significance not only within start-ups but also among well-established corporations (Neubauer et al., 2017).

AI stands at the forefront of pivotal tools driving the digitalization journey, wielding the potential to profoundly shape the future by directly influencing the developmental trajectories of nations. Positioned among the forefront technologies driving digitalization, AI holds transformative capabilities, impacting not just states but also societies and various organizational structures. Complementing AI, an array of other tools—such as 3D printers, the internet of things, big data, smart mobile devices, cloud computing, robotics, and blockchain—further accentuate the digitalization landscape (Turkey Artificial Intelligence Initiative, 2019).

The evolution of AI technologies portends a potential shift in the roles of states concerning the transformational trajectory. Within this unfolding paradigm, the role of education administrators assumes a critical juncture. Consequently, this study endeavors to delve into the perspectives of administrators regarding digital leadership in the era dominated by AI. Aligned with the overarching aim, the study delineates sub-objectives as follows.

Sub Objectives:

1. What are the perceptions of education administrators towards AI in the changing world conditions?
2. What are the perceptions of educational administrators on the use of AI in education?
3. What are the perceptions of educational administrators towards digital leadership?
4. What are the general perceptions of managers towards digital leadership in the context of AI?
5. What are the suggestions of educational administrators for digital leadership in the age of AI?

Method

This section contains detailed information about the research model, study group, data collection tool, and data analysis.

Research Design

The study was designed in accordance with the phenomenology design, one of the qualitative research methods. A phenomenological study, in which a detailed examination of a subject is made, offers the researcher the opportunity to examine the subject in depth (Yıldırım and Şimşek, 2013).

Participants

The study group of the research consisted of 15 educational administrators working in the 2022-2023 academic year. The participants were determined by maximum sampling design, one of the purposeful sampling methods. Purposive sampling is one of the sampling techniques used in qualitative research and is defined as the selection of units (individuals, groups, etc.) related to answering research questions based on certain purposes (Teddlie and Yu, 2007). Table 1 shows demographic information of participants (gender, institution, teaching seniority, management seniority).

Table 1. Demographic Information of Participants

Participant Code	Gender	Branch	Institution	Teaching Seniority	Management Seniority
P1	Male	Literature	Middle School	3	8
P2	Male	PCG	Science and Art Centers	21	4
P3	Male	Social Science	Middle School	4	21
P4	Female	PCG	Guidance and Research Center	20	1
P5	Male	English	Primary School	11	1
P6	Male	Primary School	Primary School	6	14
P7	Male	Primary School	Ministry of National Education	16	9
P8	Female	Science	Middle School	5	3
P9	Male	Maths	High School	5	20
P10	Male	Classroom	Ministry of National Education	4	19
P11	Female	Maths	Middle School	12	1
P12	Female	English	Primary School	9	9
P13	Male	Classroom	Primary School	7	9
P14	Male	Classroom	Middle School	14	7
P15	Male	Classroom	Science and Art Centers	3	20

Data Collection and Analysis

Data were collected through a semi-structured interview form. In the semi-structured interview technique, the researcher prepares the interview protocol including the questions s/he plans to ask (Türnüklü, 2000). In this method, the interviewer has the freedom to ask additional questions in order to obtain more detailed information as well as asking pre-prepared questions based on the topics or areas prepared in advance (Yıldırım and Şimşek, 2013). In qualitative research, the aim is to make specific explanations rather than generalizing information (Creswell and Poth, 2016). In this context, semi-structured interviews were conducted with 15 educational administrators who constituted the study group. After the necessary explanations were made to the participants, the interviews were conducted on a voluntary basis via Zoom. The interviews were conducted online by the researchers after making appointments and lasted approximately 35-45 minutes.

Descriptive analysis and content analysis were used to analyze the data obtained from the interviews. In descriptive analysis, the data are summarized and interpreted according to predetermined themes, and direct quotations are used to reflect the views of individuals in a striking way (Yıldırım and Şimşek, 2013). In content analysis, which is a widely used technique in qualitative research (Stemler, 2001), the researcher needs to decide what will form a pattern, what will constitute a theme, and how this structure will be named (Patton, 2014). Content analysis is carried out in four stages: analyzing the data and dividing them into meaningful sections and conceptualizing these sections "coding the data", explaining the data at a general level by using codes and bringing the codes together in certain categories "finding themes", organizing the data according to codes and themes in a way that the reader can understand "organizing and defining the data according to codes and themes" and explaining the relationships between the collected data "presenting and interpreting the findings" (Creswell and Poth, 2016; Yıldırım and Şimşek, 2013).

Accordingly, in the first stage, raw data texts were created by transferring the data in the audio recordings and interview forms to the computer environment. In determining the codes, the concepts used in the literature and the data obtained from the interviews were taken into consideration. Thematic coding was performed by taking into account the similarities, and commonalities between the concepts and themes were created. During thematic coding, efforts were taken to ensure that the concepts in the themes formed a meaningful whole with each other.

In this context, themes and codes were organized in a way to be related to each other, and comments and thoughts were included in line with the purpose of the study. Expressions that exemplify the views of the participants were carefully included in the analysis. The administrators were coded as P1: Participant 1, P2: Participant 2.

Role of the Researcher

The pivotal role of the researcher in qualitative research is paramount across critical stages of the process. Central to this role is active engagement in data collection, analysis, and interpretation. During the data collection phase, the researcher engages with participants, crafting interview questions, making observations, and overseeing the collection process. Subsequently, organizing data, coding, and identifying themes form essential steps. Building upon the analysis outcomes, researchers delve into interpretation, facilitating a deeper comprehension of participants' thoughts and experiences, ultimately serving as the primary objective of the research. Furthermore, upholding ethical standards, including adherence to ethical guidelines and safeguarding participants' rights, falls within the purview of the researcher's responsibilities.

Moreover, the researcher's influence extends into the research's design phase, encompassing the identification of research questions, participant selection, methodological choices in data collection, and the formulation of analysis strategies. As such, the researcher's role in qualitative research spans a spectrum, ranging from data collection and analysis to ethical compliance and research design (Creswell and Poth, 2016; Denzin and Lincoln, 2011; Morse et al., 2002).

Validity and Reliability

Unlike quantitative research, qualitative research is not evaluated within the framework of validity and reliability concepts, but within the framework of credibility instead of internal validity, transferability instead of external validity, consistency instead of internal reliability, and confirmability instead of external reliability in accordance with the nature of qualitative research (Lincoln and Guba, 1985). In the context of credibility, long-term communication with participants, deep-focused data collection, triangulation, expert review, and participant confirmation methods were used. In the context of transferability, detailed description and purposive sampling methods were used. Depending on the nature of qualitative research, the variability of events and phenomena was consistently reflected in the research. In addition, within the scope of confirmability, the results were compared with the raw data to see whether the confirmation mechanism was working (Erlandson et al., 1993).

Ethical Approval

Ethical permission (18.07.2023/07-41) was obtained from the Marmara University Ethics Committee for this research.

Findings

As a result of the content analysis, four themes were explored as follows: General Perceptions of Educational Administrators towards AI, Educational Administrators' Perceptions on the Use of AI in Education, Educational Administrators' Perceptions of Digital Leadership, Educational Administrators' Suggestions for Digital Leadership, and AI. In this section, the findings are presented separately within the framework of the themes, and the categories and codes forming the themes are given.

Table 2. General Perceptions of Educational Administrators towards AI

Theme	Category	Code	Participants
General Perceptions Towards AI	Advantages	Making things easier	K1, K2, K3, K4, K5, K6, K8, K9, K10, K11, K12, K13, K14, K15
		It's an exciting technology	K1, K2, K3, K4, K5, K6, K8, K9, K10, K11, K12, K13, K14, K15
		Facilitating knowledge management	K1, K2, K3, K4, K5, K6, K7, K8, K9, K10, K11, K12, K13
		Improving the thought system	K4, K7, K10, K14, K15,
		Saving time	K1, K7, K8, K14
		Indispensable for technology	K6, K10, K14, K15
		Ability to make decisions on behalf of people	K8, K11, K14, K15
		Neutral and transparent	K10, K11, K12,
		Increasing productivity	K8, K11
		An effective system in every field	K15

Limitations and Disadvantages	Posing a threat	K1, K2, K3, K4, K5, K7, K8, K10, K12, K13, K14
	The impossibility of replacing the human being	K1, K3, K5, K6, K12, K13 K6, K11, K14, K15,
	Inability to meet social and psychological needs	K1, K2, K3, K5, K6, K11, K12, K13, K14, K15
	Risk of abuse	K3, K4, K5, K6, K9, K10, K12, K13, K15
	Partial ability to substitute for humans	K1, K3, K5, K13 K6, K12
	Inability to foresee the ending	K4, K8, K13, K14, K15
	Lack of readiness in society	K1, K2, K6, K7, K10
	Ignoring human emotions	K3, K5, K6, K14
	Risk of protection of personal data	K2, K5, K8, K15
	Ethical problems	K5, K7, K11, K15
	In the process of imposing access limitations	K1, K8
	Worries about replacing humans	K7, K10
	Ignoring cultural, religious, and philosophical values	K15
	A cloud-based data system	K15
	Damaging human productivity	K14
	Causing information pollution	K15
	Blunting problem-solving skills	K13
	Inhibiting creative thinking	K13

In Table 2, participant opinions are segmented into two categories: advantages and limitations/disadvantages. Within the advantages category, a prevailing trend among most participants was the recognition of AI's facilitative role across educational domains. They highlighted its dynamic nature as a technology continually evolving, adding excitement and contributing to enhanced knowledge management. Notably, consensus surrounded its potential to revolutionize education across diverse fronts. Conversely, within the limitations/disadvantages category, a predominant concern voiced by the majority was the substantial threat posed by AI. Participants converged on the belief that, regardless of its sophistication, AI will never entirely supplant human capabilities. Moreover, a significant obstacle identified was its perceived inability to cater to the intricate social and psychological needs of individuals. In the advantages segment, a prevalent viewpoint underscored AI's promise in addressing issues related to impartiality and transparency—areas where human interventions have historically fallen short. Conversely, within the limitations and disadvantages section, a singular participant articulated the notion that AI, being a universal system, might inherently struggle to align with diverse cultural, religious, and philosophical values specific to each nation. Additionally, an emerging concern emphasized the imminent role of AI in defining societal boundaries. Some of the participants' views are presented as follows:

P11: *There will always be a need for people to use AI. In the social and psychological context, there will be a need for human guidance, sociability, smiling faces, understanding, and empathy.*

P3: *Machines, applications, and programs that can think and decide like humans are very exciting. Especially those based on visualization are impressive to me. But I see that it is not yet in a position to do anything for us.*

P15: *We all have a culture and identity. Our national spiritual values, social arguments we have developed, traditions, customs, traditions. Being a global citizen is important, of course, but we should protect our identities by preserving our culture. AI should serve a structure that can make us feel at peace, democracy, and tranquility.*

Administrators' perceptions on the use of AI in education are given below:

Table 3. Educational Administrators' Perceptions on the Use of AI in Education

Theme	Category	Code	Participants
Perception of the Use of AI in Education	**Management**	The interpretation and the final part still need to be done by human beings	K1, K2, K3, K6, K7, K9, K10, K11, K12, K13, K14, K15
		Difficult to implement in decisions involving social relations in management	K1, K2, K3, K4, K6, K7, K8, K10, K11, K13, K14, K15
		Easily doing paperwork and bureaucratic work	K1, K7, K10, K11, K13
		Consultation tool at the initial stage of decisions	K6, K7, K10, K11, K14

	Difficult to implement	K2, K5, K6
	Possibility of decreasing efficiency in education	K3, K5
	Suitable for the first stage of school principal assignments	K2, K6
	Incapable of making significant decisions	K5, K6
	Its use depends on the type of decision	K13
	Unavailability in case of crisis	K4
	Facilitating the teacher's work	K1, K2, K3, K4, K5,K6, K7,K9, K11
Teacher Support Services	Faster and more systematic assessment	K1, K2, K3, K4,K5,K6, K7, K8, K10, K11,K12,K13
	Identification of missing subjects from exam results	K1, K2, K3, K11, K12, K13, K14, K15
	Reducing the rate of human errors	K3, K8, K5, K14, K15
	Supporting learning to learn	K7, K8, K11, K13, K14, K15
	More time is needed for the integration into education	K1, K5, K6, K11,K15
	Providing material and activity support	K13
	Increasing specialization	K15
	Having student recognition systems	K15
	Reducing working hours	K15
	Use in educational and preventive guidance	K2

In Table 3, the participants shared their opinions on the use of AI in education within the categories of management and teacher support and services. Under the management category, a majority of participants emphasized recurring opinions. They highlighted that the interpretative aspect of management remains within the realm of human capability and should not be altered. Furthermore, they expressed difficulty in applying AI to decisions concerning social relations in management. Regarding teacher services and support, the participants frequently emphasized several key opinions. They highlighted AI as a crucial system that streamlines a teacher's tasks, expedites measurement and evaluation processes, and provides a systematic approach to identifying gaps in subjects based on exam results. Some of the participants' views are indicated as follows:

P12: *I think it will facilitate the teacher's work in many issues such as processing, evaluating, archiving, adapting data above human capacity, especially in measurement and evaluation processes, and making suggestions by analyzing needs when necessary.*

P5: *We work with people, it is difficult for us to communicate with students, teachers, parents, and other support staff without eye contact. Since we are administrators with a heart, we need to share our teacher's distress at that moment and make the right decision. Therefore, the final decision in these situations should be with the human being.*

Educational administrators' perceptions of the digital leadership theme are given below:

Table 4. Educational Administrators' Perceptions of Digital Leadership

Theme	Category	Code	Participants
Educational Administrators' Perceptions of Digital Leadership	**Digital Leader Features**	Digitally literate	K1, K2, K3, K4, K5, K6, K7, K8, K10, K11, K12, K13, K14
		Ability to use technological tools	K1, K2, K3, K4, K5, K7, K8, K12, K13, K14, K15
		Having a vision	K6, K7, K9, K10, K11, K12, K13, K14, K15
		Capturing the speed of transformation	K1, K2, K3,K4,K5, K6, K7,K8,K9,K10, K11, K13
		Aiming to increase digital literacy	K7, K8, K10, K11, K12, K13, K14
		Active in management	K6, K8, K10, K11, K12, K13
		A motivating person	K1, K2, K3, K4, K6, K13, K14
		Role model	K1, K2, K3, K4, K6,
		Following technological innovations	K8, K10, K11, K13
		Embodying all kinds of leadership qualities	K4, K7
		Having high communication skills	K9, K15
		Collaboration in digital environments	K14

	Capable of captivating audiences in the digital world	K6
	Faster decision making	K1, K3, K7, K12, K13, K14, K15
Advantages	Removing borders in cooperation	K1, K2, K3, K4, K5, K6, K7, K8, K10, K11, K12K13
	Ability to communicate faster	K1, K3, K4, K5, K6, K11, K12
	Facilitating meetings	K3, K5
	A rich and diverse collaboration	K7, K8
	Virtual collaboration	K13, K15
	Communication channels are always open in digital leadership	K14, K15
	Responsibility is easier to follow	K12
	Digital leaders are more advantageous in terms of time and space	K14
Limitations	Resistance to digital transformation	K1, K2, K3, K4, K5, K6, K8, K10, K11, K12, K13, K14
	Lack of in-depth communication	K1, K3, K5, K8, K9, K10, K11, K12, K13, K14, K15
	People's prejudices in digital communication	K1, K2, K3, K4, K5, K6, K7, K8, K10, K11
	Difficulty in collaboration	K3, K5
	Existence of Those Who Can't Keep Up	K6, K8
	Obstacle to success	K5

Table 4 presents the insights shared by the participants across three categories regarding their perceptions of digital leadership: characteristics of the digital leader, advantages of digital leadership, and limitations of digital leadership. According to educational administrators, the predominant characteristics defining a digital leader revolved around proficient digital literacy, adeptness in utilizing technological tools and possessing a visionary approach capable of adapting to the pace of digital transformation. Within the category of advantages, a prevailing sentiment among the majority of participants highlighted the superiority of digital leaders in making swift decisions and breaking down barriers to collaboration compared to their non-digital counterparts. Conversely, in the limitations category, the participants expressed several concerns. They noted resistance toward digital transformation, a lack of deep interpersonal communication, and prevalent biases in digital interactions—particularly among individuals who have adopted digital practices later. Some of the participants' views are presented as follows:

> **P14:** *I think it would not be possible to separate digital leadership from digital literacy because I think that digital leaders are also digital literate in terms of integrating technological applications into their work, using, managing, and applying technological data in the business environment.*
>
> **P6:** *If your pace of transformation is much slower than the pace outside, the end is inevitable. So, we have to keep up with the pace of transformation and change outside. If our internal institutional speed is much less than that, I think it is a matter of time before we disappear, so we have to cooperate.*
>
> **P8:** *I think there is no in-depth communication because there is no face-to-face communication and I think this is a big problem.*

Educational administrators' suggestions for digital leadership and AI theme is given below:

Table 5. Educational Administrators' Suggestions for Digital Leadership and AI

Theme	Code	Participants
Recommendations for AI and Digital Leadership	Establishing digital culture	K1, K2,K3,K4,K5,K6, K7,K8, K9,K10,K11, K12,K13,K14,K15
	Digital literacy training	K1, K2, K3,K4,K5, K6, K7, K8, K9, K11, K14, K15,
	Theoretical and practical training	K1, K2, K3,K4,K5, K6, K7, K8, K9, K11, K14, K15,
	Basic level AI training	K1, K2, K3,K4,K5,K6,K7, K9, K13,K15
	Basic computer usage training	K5, K9, K14
	Idea workshops	K5, K6, K7, K8
	Data management, data analysis, data privacy training	K9, K12, K13

	Encouraging competitions	K1, K9
	Awareness	K3, K11
	Innovation and entrepreneurship training	K9, K13
	Foreign language training	K9, K15

In Table 5, educational administrators articulated their suggestions within the realm of recommendations for AI and digital leadership. Their insights revealed a series of prominent suggestions for digital leaders navigating the landscape of AI and digital leadership. Foremost among the suggestions provided by the participants was the emphasis on evaluating digital leadership and AI within the context of digital transformation. Central to this suggestion was the imperative to cultivate a digital culture within educational organizations, establishing a foundation for their integration. Secondly, the participants strongly advocated for widespread digital literacy training, extending beyond educational administrators to encompass every individual involved in the educational ecosystem. The proposal underscores the importance of equipping all stakeholders with the necessary skills to navigate the digital landscape effectively. Another critical issue, ranked third and echoed by multiple participants, was the call for enhanced training initiatives in both theoretical and practical aspects. This suggestion might stem from the perceived deficiency in comprehensive training programs, highlighting the need to address this gap for effective utilization of AI and digital leadership in education. Some of the participants' views are depicted as follows:

> **P7:** *In order to ensure digital transformation, we need to spread digital culture, make serious collaborations and protocols with stakeholders, unite employees in a common vision, and act in line with this vision.*
>
> **P12:** *Training on using relevant tools with the right methods and techniques, ethical principles, personal data protection, digital literacy, digital awareness, and limitations can be provided.*

Discussion

The education sector is currently undergoing a rapid and profound transformation, heavily influenced by AI and digital technologies. This evolution underscores the critical significance of digital leadership within education. Teachers, students, and educational administrators must adapt to the demands of this new era, effectively utilize technology, and enhance the learning experience. Digital leadership is now recognized as a pivotal factor in unlocking the full potential of both students and educators. Leaders in this field must successfully implement this new paradigm while upholding ethical values. To explore this, this study aims to delve into the general perceptions of educational administrators concerning AI, their views on its application in education, their understanding of digital leadership, and their suggestions for effective digital leadership within the context of AI. The goal is to comprehensively investigate their opinions and insights in these areas.

The study's findings revealed that educational administrators generally perceived AI as a highly beneficial system that streamlines life processes. They acknowledged its substantial impact, particularly as its development pace accelerates, emphasizing its crucial role in simplifying information management. Presently, numerous AI applications, such as personal assistants like "Siri," game theories, language translations, intelligent education management systems, virtual classrooms, hand-face-image recognition systems, automation, and robotic tracking systems, have become integral parts of our lives (Arslan, 2020). However, while acknowledging its considerable advantages, administrators also expressed concerns about the potential dangers and constant risk of misuse associated with AI. This sentiment aligns with corroborating studies (Wang, 2021).

Within its limitations, educational administrators held the view that ignoring the stage AI reaches will never entirely replace human beings. Participants emphasized that artificial intelligence cannot make multidimensional evaluations as effectively as humans can. They recognized that despite current advancements, AI falls short in addressing social and psychological human needs. Although experts suggest the potential for human intelligence to adapt to computers, the complexity of the human brain presents significant challenges in achieving this feat (McCarthy, 2004).

A prominent viewpoint within this context highlights the evolving constraints of AI. Exploiting AI applications may lead to the misuse of private data or raise moral concerns. Consequently, the necessity of imposing limitations on AI access becomes increasingly crucial to delineate and oversee the ethical and societal dimensions of this technology. The determination of how stringent or flexible these limitations should become an area requiring collaboration between societies, governments, and technology companies.

Another significant finding of the research revolved around concerns that AI might disregard our cultural, religious, and philosophical values. Such disregard not only poses ethical dilemmas but also raises issues regarding social acceptance and usability. AI applications that overlook the needs stemming from diverse cultures and religious beliefs might face challenges in gaining acceptance within societies. Wang (2021) highlighted in their study that moral values like justice, equality, and honesty are likely to clash with the increasing use of AI, as indicated by the study's outcomes. Roll and Wylie have also addressed the moral and cultural dimensions of AI in

their study (Roll and Wylie, 2016). There's a risk that AI algorithms may inadequately represent cultural diversity and various belief systems. Consequently, both AI developers and users must endeavor to devise more ethical and equitable solutions by actively considering cultural diversity and values in the application of technology.

The research findings concerning the utilization of AI in education reveal that educational administrators emphasize the critical role of human interpretation and decision-making in management contexts. Particularly in decisions involving social relationships within management, the study underscores the importance of human intervention. AI systems may struggle to effectively assess emotional responses, social intricacies, and personal connections as these elements often entail complexities that cannot be distilled into quantifiable data.

In the realm of teacher support and services, the integration of AI proves immensely beneficial by streamlining teachers' tasks, expediting assessment and evaluation processes, and systematically identifying areas of improvement based on examination results. This support significantly benefits both educators and students. Studies by Arslan (2020) and Ahlquist (2020) corroborate these research findings, validating the impact of AI in both management contexts and enhancing teacher support and services. Contemporary learning technologies manifest in diverse forms, ranging from multimedia documents to virtual reality experiences, all aimed at enhancing learning environments. These technological advancements play a pivotal role in assisting educators by providing content aligned with specific design principles (Cojean and Martin, 2021), thereby fostering enriched learning experiences. The ASSISTments platform exemplifies this shift by initially evaluating students on standardized test-related knowledge and subsequently offering personalized support when needed (Heffernan and Heffernan, 2014). These studies corroborate and fortify the conclusions drawn from this study.

As technology and digital business models progress, the foundational assumptions of digitalization are undergoing a profound reevaluation. This phenomenon bears a resemblance to the observations made in management theories, which experienced a similar pivotal shift earlier (Uhl-Bien et al., 2007). The transformative force of digitalization extends beyond businesses, reshaping not only operational conditions but also the landscape of leadership. Remarkably, the concept of digital leadership has remained relatively underexplored in scholarly discourse (Hesse, 2018).

This study aimed to delve deeply into the perceptions of educational administrators regarding digital leadership. The research findings illuminate the educational administrators' viewpoint, defining a digital leader as one who possesses digital literacy, adeptness in utilizing technological tools, and a visionary outlook. Moreover, several studies concur with and reinforce these identified attributes (Antonopoulou et al., 2021; Ömer, 2020; Zhong, 2017; Sağbaş and Erdoğan, 2022). Persson and Manas's research (2021) accentuated the significance of digital leadership by revealing that leaders exhibiting elevated levels of digital leadership across management, customer, digital, and organizational domains wield a positive influence in crafting strategies for digital transformation.

Digital leaders wield a pivotal role in steering the integration and adaptation of digital technology within their organizational frameworks. Consequently, a profound understanding of the evolving digital ecosystem becomes imperative for these leaders to instigate transformative changes within businesses (Promsri, 2019). Beyond technological prowess, digital leadership necessitates an adeptness in harnessing the advantages offered by digital technologies and embedding them within the organizational fabric (Sainger, 2018). Multiple studies have underscored the indispensable role of leadership in fostering the adoption of technologies, nurturing digital innovations, and thereby fostering a competitive edge (Cameron, 2012).

These referenced studies provide further corroboration for the conclusions drawn within this study. In agreement with the study's findings, Fitzgerald et al. (2014) asserted that the success of digital transformation hinges upon the complete alignment of the entire organization towards a shared vision. They posited that digital leaders hold the responsibility of crafting a vision that can be effectively communicated to employees. This involves the formulation of a coherent roadmap and adherence to its trajectory, complemented by the provision of tangible and measurable goals along with incentives to drive their attainment (Promsri, 2019; Fitzgerald et al., 2014). Furthermore, supporting another key finding of this research, additional studies reinforce the notion that digital leaders must adeptly match the velocity of digital transformation (Antonopoulou et al., 2021).

The realm of advantages stemming from digital leadership encompasses swift decision-making and the dissolution of barriers to collaboration within organizations. The amalgamation of data analytics and AI, facilitated by technology, empowers leaders with the capacity for expedited and precise evaluation and decision-making processes.

Traditionally, collaboration has been impeded by physical constraints such as location, time disparities, and geographical boundaries. However, the advent of virtual platforms, cloud technology, and collaborative tools have dismantled these barriers, enabling seamless interaction between teams and stakeholders. Collaboration stands as a pivotal pillar within the domain of digitalization, as indicated by recent research emphasizing its centrality within digitally mature organizations (Kane et al., 2019).

A significant revelation within the confines of the limitations associated with digital leadership, as highlighted in this research, delineates the challenges encountered by educational administrators. These challenges stem from

impediments such as resistance among organizational members towards collaborative efforts, deficient depth in communication, and prevalent biases held by stakeholders concerning digital communication. The resistance exhibited by organizational members hampers cooperative endeavors, posing a substantial hurdle for educational administrators navigating the realm of digital leadership. Furthermore, a notable deficiency in the depth of communication adds to the complexities faced, hindering effective interaction and understanding.

Within the realm of suggestions provided by educational administrators concerning digital leadership and AI, the study reveals a series of recommendations. Administrators advocate for the initiation of studies aimed at fostering a digital culture within organizations, offering digital literacy training programs, and providing comprehensive theoretical and practical training concurrently. Corroborating these findings, Cortellazzo et al. (2019) asserted in their study on leadership in the digitalized landscape that fostering a digital culture holds paramount importance for leaders. This digital culture facilitates collaborative processes within intricate scenarios, addressing ethical concerns that often accompany complex digital environments.

The culmination of this study underscored the pivotal role of AI in our era, notably transforming organizations to a significant degree. Concurrently, it revealed a distinct perception among digital leaders who, despite focusing on aspects that enhance education, harbor a heightened awareness of encountering substantial threats within this transformative landscape. Moreover, the findings distinctly highlighted the imperative for educational administrators to acquire training within the realms of AI and digital leadership. This necessity emerges from the recognition of the substantial impact these domains exert on educational frameworks, demanding a proactive approach to equip administrators with essential skills and insights.

Recommendations

1. Specific training programs should be created to develop digital leadership skills. These programs should provide education managers with practical knowledge and skills on topics such as AI, data analytics, and digital strategies.
2. Educational administrators should be offered training focusing on effective change management strategies for AI integration and digital transformation processes in schools. This can help manage technological changes smoothly and effectively.
3. There is a need to develop innovative approaches to education policy that focus on AI and digital leadership. Policymakers should collaborate with education administrators and create policy frameworks that ensure the effective and equitable use of technology.
4. Educational administrators should encourage the participation of teachers and other school staff in decision-making processes related to AI applications. This can lead to more effective use of technology and evaluation of innovative ideas.
5. Education administrators should develop guidelines that address ethical issues and data security issues related to the use of AI. This is important to protect student data and uphold ethical standards.

Author (s) Contribution Rate

The Authors equally contributed to this research.

Conflicts of Interest

There are any potential conflicts of interest.

Ethical Approval

Ethical permission (18.07.2023/07-41) was obtained from the Marmara University Ethics Committee for this research.

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