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RESEARCH ARTICLE
Classroom Education

Artificial Intelligence and Education: Classroom Teachers' Experiences and Perceptions

Yapay Zeka ve Eğitim: Sınıf Öğretmenlerinin Deneyimleri ve Algıları

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ABSTRACT

Changes and developments in the field of technology are reflected in the educational environment and affect students and teachers in various ways. Artificial intelligence, which has been much more involved in daily life in recent years, is thought to bring about radical changes in the educational environment in the future. For this reason, teachers' perceptions, concerns and usage levels of artificial intelligence are of great importance. In this context, the aim of this study is to reveal the perceptions of classroom teachers about artificial intelligence and their opinions about their concerns. Phenomenology (phenomenology), one of the qualitative research method designs, was used in the study. The study group of the research consists of 40 classroom teachers, 28 female and 12 male, working in the center of Malatya in the 2024-2025 academic year. Purposive sampling, one of the non-random sampling methods, was preferred in the study. The data were collected through semi-structured interview questions and analyzed by content analysis method. As a result of the research, it was seen that the vast majority of classroom teachers did not receive any training on artificial intelligence. However, it was seen that most of them use artificial intelligence tools in their lessons. While teachers stated that artificial intelligence positively affects the educational environment, facilitates understanding and learning, and makes learning practical, they also stated that it can lead to laziness. It was determined that classroom teachers use artificial intelligence in the fields of banking, education and health and generally prefer to access information. In addition, while some classroom teachers stated that they did not have any concerns about the use of artificial intelligence in the education environment, others stated that they were concerned that it would accustom students to laziness, increase digital addiction, reduce students' research skills, reduce teacher-student interaction, and accustom students to readiness.

Keywords: Artificial Intelligence, Classroom Teachers, Education, Primary School.

ÖZET

Teknoloji alanındaki değişiklikler ve gelişmeler eğitim ortamına da yansımakta ve öğrencileri ve öğretmenleri çeşitli şekillerde etkilemektedir. Son yıllarda günlük yaşamda çok daha fazla yer alan yapay zeka, gelecekte eğitim ortamında köklü değişiklikler getireceği düşünülmektedir. Bu nedenle, öğretmenlerin yapay zeka algıları, endişeleri ve kullanım düzeyleri büyük önem taşımaktadır. Bu bağlamda, bu çalışmanın amacı, sınıf öğretmenlerinin yapay zeka hakkındaki algılarını ve endişeleri hakkındaki görüşlerini ortaya koymaktır. Çalışmada, nitel araştırma yöntemlerinden biri olan fenomenoloji (fenomenoloji) kullanılmıştır. Araştırmanın çalışma grubu, 2024-2025 öğretim yılında Malatya merkezinde görev yapan 28 kadın ve 12 erkek olmak üzere 40 sınıf öğretmeninden oluşmaktadır. Çalışmada, rastgele olmayan örnekleme yöntemlerinden biri olan amaçlı örnekleme tercih edilmiştir. Veriler yarı yapılandırılmış görüşme soruları ile toplanmış ve içerik analizi yöntemi ile analiz edilmiştir. Araştırma sonucunda, sınıf öğretmenlerinin büyük çoğunluğunun yapay zeka konusunda herhangi bir eğitim almadığı görülmüştür. Ancak, çoğunun derslerinde yapay zeka araçlarını kullandığı görülmüştür. Öğretmenler, yapay zekanın eğitim ortamını olumlu etkilediğini, anlamayı ve öğrenmeyi kolaylaştırdığını ve öğrenmeyi pratik hale getirdiğini belirtirken, aynı zamanda tembelliğe yol açabileceğini de belirtmişlerdir. Sınıf öğretmenlerinin yapay zekayı bankacılık, eğitim ve sağlık alanlarında kullandıkları ve genel olarak bilgiye erişmeyi tercih ettikleri tespit edilmiştir. Ayrıca, bazı sınıf öğretmenleri eğitim ortamında yapay zeka kullanımına ilişkin herhangi bir endişeleri olmadığını belirtirken, diğerleri öğrencileri tembelliğe alıştırması, dijital bağımlılığı artırması, öğrencilerin araştırma becerilerini azaltması, öğretmen-öğrenci etkileşimini azaltması ve öğrencileri hazır olmaya alıştırması konusunda endişeli olduklarını belirtmişlerdir.

Anahtar Kelimeler: Yapay Zeka, Sınıf Öğretmenleri, Eğitim, İlkokul.

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INTRODUCTION

Artificial intelligence has great potential to achieve economic and social goals such as increasing productivity, security and welfare, and has become one of the most important elements of the digital economy. As of 2021, artificial intelligence has begun to manifest itself in many sectors, from manufacturing to health, transportation to finance, law to advertising and education. Since 1995, many predictions have been made about the future of artificial intelligence, but over time, some of these predictions have come true and become a part of our lives in a concrete way. The two most important factors in the development of artificial intelligence are increasingly powerful algorithms and big data analysis. The increase in the volume and variety of data has enabled artificial intelligence to work more effectively

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and expanded its areas of use. At the point reached today, artificial intelligence is no longer limited to certain fields, but has become an integral part of daily life (Yılmaz et al., 2021).

Artificial intelligence can be defined as a system that allows computers to learn certain reasoning and decision-making processes without the need for direct instruction from humans. Thanks to deep learning techniques, computers can recognize patterns by analyzing large data sets and develop their own behaviors based on past experiences. This process enables systems to make smarter and more effective decisions over time (Bostrom, 2014). Artificial intelligence is a technology based on heuristic programming and aims to enable computers to perform human-like tasks. Basically, artificial intelligence systems analyze the functions performed by humans and try to gain the ability to perform these tasks automatically (Slage as cited in Karaduman, 2019). According to Remian (2019), artificial intelligence is the ability of robots or digital tools controlled by computers to perform human-like tasks by interacting with humans. These technologies have advanced capabilities designed to mimic human tasks (Remian, 2019). In the report published by Stanford University, the following conclusions were made about the current state of artificial intelligence:

Artificial intelligence is better than humans in some areas.

- ✓ Studies on artificial intelligence were mostly sector-based. Academic studies were not that effective.
- ✓ AI models have become much more expensive.
- ✓ The US has surpassed all its competitors in terms of the best AI models.
- ✓ AI models are not tested according to certain standards.
- ✓ Investments in productive AI continue to grow.
- ✓ AI is boosting worker productivity.
- ✓ Artificial intelligence has accelerated scientific studies.
- ✓ Legal regulations on AI are on the rise.
- ✓ People are more aware and nervous about the potential impacts of AI (Kalelioğlu, 2024).

In recent years, when artificial intelligence has had a dramatic impact on our lives, there have been revolutions in various sectors. However, this revolution does not progress at the same rates when geography is taken into account. It can be said that the use of artificial intelligence is directly related to the economic development, access to technology and education levels of countries. With investments in education and increasing technology awareness, artificial intelligence-based systems need to be adopted rapidly. Turkey ranks 47th among 160 countries in the International Artificial Intelligence Index and this needs to be improved. For this, big data management and storage infrastructure investments need to be significantly increased, and regulations need to be put in place to ensure the ethical and fair use of artificial intelligence. This is critical for both justice and other sectors (Üstüncan, 2024).

Artificial Intelligence and Education

The integration of artificial intelligence into the field of education has expanded further with methods such as programmed instruction, web-based education and internet-assisted learning, which have developed since the 1960s. Programmed instruction, in particular, includes structured steps, practices and evaluation processes to achieve the determined teaching objectives by providing a systematic approach to education. While this method makes the teaching process more planned and effective, basic principles such as individual learning, progress in small steps, reinforcement, immediate feedback and focus on success are reflected in today's artificial intelligence applications. AI-supported education systems provide a more personalized and efficient learning environment by offering appropriate learning experiences for students (Ünsal, 2024). Education systems around the world are constantly renewing themselves with the integration of artificial intelligence applications. In Turkey, the Ministry of National Education aims to make improvements by using artificial intelligence technologies in education in line with its 2023 goals. The studies carried out in this context aim to support educators to keep themselves up to date in this field and adapt to new technologies by providing information about the usage areas and benefits of artificial intelligence in education. In addition, such studies are important in terms of providing up-to-date information and resources for those who want to focus on AI-based educational methods. Artificial intelligence applications have the potential to create a more effective and efficient learning environment for both educators and students by bringing an innovative perspective to educational processes (İşler & Kılıç, 2021). Artificial intelligence has three main roles in education:

- ✓ Student-oriented: AI can make learning processes more effective by providing content tailored to students' individual learning needs. It can track students' progress and provide them with customized support.

- ✓ For the Teacher: AI can ease the workload of teachers by facilitating their lesson planning, evaluation and feedback processes. Also, by automating administrative tasks, teachers can have more time.
- ✓ For the Education System: AI can analyze data to improve the overall efficiency of education systems. It can be used as an important tool for using resources more effectively, developing educational policies and optimizing the system (Baker et al., 2019).

This classification shows that AI in education aims to support individual learning, support teachers and improve education systems.

Today, the use of artificial intelligence in education covers a wide area with applications based not only on knowledge but also on data and logic. Artificial intelligence manifests itself in many different systems that support educational processes. These include personalized learning, dialogue-based education systems, discovery-based education, data mining in education, article analysis, intelligent agents, chat bots, supportive education solutions for children with special needs, child-robot interaction, assessment systems with artificial intelligence and automatic test creation mechanisms. While these technologies are often aimed at enhancing the learning experience of students, the role of AI in education is not limited to this. It also contributes greatly to school and university administration. AI-powered systems directly support educational institutions in areas such as course and staff scheduling, exam management, cyber security, facility management and security, making management processes more efficient. Therefore, AI helps to transform both the teaching process and school management into a more effective and systematic one (Holmes et al., 2019).

Although artificial intelligence is not yet fully mainstreamed in education, it helps students access the information they need quickly and effectively. One of its biggest advantages is that it offers an educational experience that suits students' own learning pace and level. In addition, thanks to some AI-supported applications, students can flexibly determine their study hours and focus on their learning processes whenever they feel motivated. This flexibility allows students to focus on their lessons more efficiently and effectively, while also allowing them to get maximum benefit from education (Rouhiainen, 2019). Artificial intelligence in education offers significant advantages such as supporting individual learning processes, identifying learning difficulties, and providing personalized education programs by providing materials and activities suitable for each student's learning style. It also plays an important role in meeting today's educational needs by providing an accessible and sustainable education model in extraordinary situations such as epidemics or disasters (Saçan et al., 2022).

The development of artificial intelligence in education has brought together theories and technologies, leading to radical changes in teaching processes. This transformation will continue to have an impact at every stage of the education system and will be shaped especially based on the principle of one-to-one learning. In this direction, artificial intelligence provides transformation at four important points in education:

- ✓ One-to-one support for students: AI can help students learn more efficiently by providing personalized and effective support during the learning process.
- ✓ Testing and assessment systems: AI can bring a new dimension to the process of assessing student performance, providing faster and more accurate feedback for teachers.
- ✓ Individualized learning: Differentiated and individualized learning processes can be implemented more effectively and widely in education systems. Artificial intelligence can make learning more efficient by determining the appropriate content for students' needs.
- ✓ Automated feedback: By analyzing students' developmental processes, AI can automatically provide feedback tailored to their needs, making the learning process more dynamic and effective. This technological transformation has the potential to transform the education system into a more innovative and student-oriented structure (Arslan, 2020).

While some educators see artificial intelligence as an extension of education, others consider it as an independent tool (Hong et al., 2020). Artificial intelligence personalizes the learning process by providing content tailored to students' individual needs, allowing each person to progress at their own pace. It also reduces teachers' assessment and monitoring workload, enabling them to provide more efficient and effective guidance. By identifying students' weaknesses and providing support through instant feedback, it contributes to the development of educational policies through big data analysis. In these ways, artificial intelligence plays a significant role in creating a more inclusive, effective, and innovative education system. In this context, in this study, the perceptions, knowledge, experiences and opinions of primary school teachers about artificial intelligence and its adaptation to education were tried to be addressed comprehensively.

METHOD

In this study, phenomenology approach, one of the qualitative research methods, was used. Phenomenology offers experiences, explanations, situations and examples that provide a better understanding of a phenomenon or event (Yıldırım & Şimşek, 2021). This approach allows the researcher to collect detailed data on the topic and analyze the individual experiences of the participants in depth (Patton, 2014). In this context, the perspectives of the classroom teachers on the use and perceptions of artificial intelligence were evaluated in their own words in a comprehensive and detailed manner. Thus, thanks to the phenomenological design, teachers' experiences and opinions were conveyed in a more holistic perspective.

Working Group

The study group of this research consists of a total of 40 classroom teachers working in the center of Malatya in the 2024-2025 academic year. Of these, 28 were female and 12 were male teachers. In the study, purposeful sampling based on specific criteria and convenience sampling were preferred over random selection. Purposive sampling enables the selection of information-rich groups that are compatible with the objectives of the study in order to conduct detailed research. Thanks to this method, it is possible to collect comprehensive data and examine the identified situations in depth. Thus, the results of the research become more meaningful and explanatory (Yıldırım & Şimşek, 2016).

Table 1: Demographic Information on the Teachers Participating in the Study

		N
Gender	Woman	28
	Male	12
Professional Seniority	1-10 years	18
	10 to 20 years	16
	20 years and above	6
Class taught	Class I	11
	Class II	9
	Class III	11
	Class IV	9
Age	25 to 35	18
	35- 45	18
	45 and above	4
Total		**40**

When Table 1 is analyzed, it is seen that 28 of the classroom teachers participating in the study are female and 12 of them are male. It was determined that 18 of the teachers had a seniority of 1-10 years, 16 of them had a seniority of 10-20 years and 6 of them had a seniority of 20 years or more. Among the classroom teachers participating in the study, 11 teachers taught first grade, 9 teachers taught second grade, 11 teachers taught third grade and 9 teachers taught fourth grade. It was also seen that 18 of them were between the ages of 25-35, 18 were between the ages of 35-45 and 4 were 45 and above.

Data Collection

The data used in the study were collected through semi-structured interview questions in the second semester of the 2024-2025 academic year. Before the interviews, the participants were informed about the process and the subject, and the interview form used consisted of two parts: one included the interview questions and the other included the personal information of the participants. While preparing the form, the relevant academic sources were examined in detail and questions appropriate to the purpose of the study were formulated. The questions were prepared in a clear, precise and understandable manner and then evaluated by three experts. Necessary adjustments were made in line with the recommendations of the experts and the final version of the form was created. The study aimed to gather participants' opinions by asking questions such as “How do you think artificial intelligence affects the education and training environment?” and “What concerns do you have about the use of artificial intelligence in the education and training environment?”

Before the actual implementation, a pilot study was conducted with three classroom teachers working in public schools affiliated to the Ministry of National Education to test the validity of the form. Feedback from the participants showed that the questions were appropriate for the purpose and were clearly stated. As a result of these evaluations, the form was finalized to be used in the actual application.

Data Analysis

The data obtained from the interviews conducted within the scope of the research were evaluated using the content analysis method. In this method, data with similar characteristics are grouped according to certain themes and

concepts, then organized and interpreted in a way that readers can easily understand (Yıldırım & Şimşek, 2016). In this direction, the opinions of the individuals participating in the study were presented and analyzed in tables.

Validity and Reliability

Referring to expert opinions is an important method to ensure validity and reliability in qualitative research (Merriam, 2015). In this process, the draft interview form was presented to three experts in the field and finalized by making the necessary corrections in line with the feedback received. In addition, in qualitative research, conveying the views of the participants as they are and including direct quotations is a factor that increases the reliability of the study (Büyüköztürk et al., 2009). In this study, the researcher presented the collected data unchanged and encouraged the participants to give sincere answers by keeping their personal information such as identity and school confidential. Participants were assured about this and their consent was obtained. The participants were coded as T1, T2, T3 to ensure that the data remained anonymous and the research process was explained in detail.

FINDINGS

In this section of the study, the data obtained are analyzed.

Classroom Teachers' Thoughts on Whether They Have Received a Training on Artificial Intelligence Before

The classroom teachers participating in the study were first asked the question “Have you received any training on artificial intelligence?”. When the answers given were analyzed, it was seen that the majority of the teachers had not received any training on artificial intelligence before. The opinions of the teachers are presented in Table 2.

Table 2: Classroom Teachers' Opinions on Whether They Have Received Training on Artificial Intelligence

Categories	Participants	f
No.	1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40	**38**
Yes	7, 25	**2**
Total		**40**

When Table 2 is analyzed, the majority of the classroom teachers (38 teachers) reported that they had not received any training on artificial intelligence before. 2 teachers answered yes and stated that they had received a training before.

Classroom Teachers' Opinions on the Use of Artificial Intelligence in Their Classes

The second question asked to the classroom teachers participating in the study was “How often do you use artificial intelligence tools in your lessons?”. When the responses were analyzed, it was seen that the teacher responses differed. Teachers' opinions are presented in Table 3.

Table 3: Classroom Teachers' Opinions on the Use of Artificial Intelligence

Categories	Participants	f
Frequently	4, 8	**2**
Occasionally	1, 3, 5, 6, 7, 10, 13, 14, 16, 17, 20, 21, 23, 24, 25, 30, 31, 35, 39, 40	**20**
Nothing.	2, 9, 11, 12, 15, 18, 19, 22, 26, 27, 28, 29, 32, 33, 34, 36, 37, 38	**18**
Total		**40**

When Table 3 is analyzed, only two of the classroom teachers stated that they use artificial intelligence frequently. 20 teachers stated that they use artificial intelligence occasionally/rarely and 18 teachers stated that they never use artificial intelligence in their lessons.

Classroom Teachers' Opinions on the Effects of Artificial Intelligence on the Teaching and Learning Environment

The third question asked to the classroom teachers participating in the study was “How do you think artificial intelligence affects the educational environment?”. When the responses were analyzed, it was seen that the teacher responses differed. Teachers' opinions are presented in Table 4.

Table 4: Classroom Teachers' Opinions on the Effects of Artificial Intelligence on the Educational Environment

Categories	Participants	f
Positive	3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20, 21, 22, 23, 24, 25, 27, 29, 30, 32, 33, 34, 35, 39, 40	**31**
Negative	31, 36, 37	**3**
No Opinion	1, 2, 19, 26, 28, 38	**6**
Total		**40**

When Table 4 is examined, 31 classroom teachers stated that artificial intelligence has a positive effect on the educational environment, 3 classroom teachers stated that it has negative effects on the school and learning environment, and 6 classroom teachers stated that they have no idea what kind of effect it will have. The opinions of some classroom teachers on the subject are as follows:

"Artificial intelligence ensures that the information learned in the education and training environment is permanent. It gives them the ability to think from a perspective, to learn how to learn." T8

"I have never used and experienced artificial intelligence in the education and training environment. Therefore, I have no idea how it will affect the classroom and school." T28

"If AI is used for its intended purpose, very good results will be achieved, but in the future we may have to live life completely according to AI." T35

"AI identifies students' weaknesses and gives them more practice. It also suggests learning materials based on students' interests and increases students' interest. "T34

"I think artificial intelligence negatively affects the educational environment. Because it creates an environment of laziness after a while because students access information ready-made." T31

Classroom Teachers' Views on the Areas in Which They Use Artificial Intelligence

The fourth question asked to the classroom teachers participating in the study was "In which areas do you use artificial intelligence the most?". When the answers given were analyzed, it was seen that the teacher responses differed. Teachers' opinions are presented in Table 5.

Table 5: Classroom Teachers' Opinions on In Which Areas They Use Artificial Intelligence the Most

Category	Codes	Participants	f
Education	Visual Presentations	6, 14, 18, 40	**4**
	Question Preparation	4	**1**
	Embodiment	25, 31	**2**
	In the research	29	**1**
	Lecturing	40	**1**
	Material Making	21	**1**
	General	7, 8, 13, 17, 30, 33, 35	**7**
Health		26	**1**
Social Media		1, 15, 23	**3**
Banking		16	**1**
Photo/Artwork		20, 39	**2**
Cleaning		10	**1**
Daily Life		5, 8	**2**
In Every Field		3, 24	**2**
I do not use		2, 9, 11, 12, 19, 22, 27, 28, 32, 34, 36, 37, 38	**13**
Total			**42**

When Table 5 is analyzed, it is seen that classroom teachers use artificial intelligence mostly in the field of education (17 teachers). 4 classroom teachers stated that they used artificial intelligence in visual and auditory presentations, 1 classroom teacher in preparing questions, 2 classroom teachers in concretization, 1 classroom teacher in research, 1 classroom teacher in subject expression, 1 classroom teacher in preparing materials and 7 classroom teachers in general subjects such as obtaining information. 13 classroom teachers stated that they did not use artificial intelligence in any field, while 2 classroom teachers stated that they used artificial intelligence in photography/painting, daily life and in every field. While 3 classroom teachers stated that they use artificial intelligence in social media, 1 classroom teacher each stated that they mostly use artificial intelligence in areas such as health, banking and cleaning. The opinions of some classroom teachers on the subject are as follows:

"I use artificial intelligence mostly in the field of education. I especially benefit from artificial intelligence in subjects such as lectures, presentations, and fast access to information." T40

"I use artificial intelligence mostly in the process of concretizing the subjects I teach in students' minds." T25

"I use AI mostly in my banking transactions. It helps me a lot at this point." T16

Classroom Teachers' Opinions on the Use of Artificial Intelligence in Education

The fifth question asked to the classroom teachers participating in the study was "What kind of concerns do you have about the use of artificial intelligence in the education environment?". When the responses were analyzed, it was seen that the teacher responses differed. Teachers' opinions are presented in Table 6.

Table 6: Classroom Teachers' Thoughts on the Use of Artificial Intelligence in the Educational Environment

Category	Codes	Participants	f
Positive	Fast Access to Information	13	**1**
	No Worries	3, 4, 20, 25, 28, 30, 40	**7**
Negative	Academic/Social Regression	7, 10, 19, 37,	**4**
	Dissemination of Misinformation	8, 39	**2**
	Decreased Interaction	14, 19	**2**
	Laziness/Preparedness	2, 11, 15, 18, 21, 22, 27, 29, 31, 32, 35, 36	**12**
	Devaluation of the Profession	11	**1**
	Screen/Digital Addiction	7, 16, 18, 24, 29, 34, 38	**7**
	Fraud	23	**1**
	Distraction	36	**1**
	Unconscious Use	5, 6, 17	**3**
	Violation of Privacy	34	**1**
	Job Losses	33	**1**
No Opinion		1, 9, 12, 26	**4**
Total			**51**

When Table 6 is examined, 7 of the classroom teachers stated that they did not have any concerns about the use of artificial intelligence in the education environment. 1 teacher emphasized that contrary to the concern, it would have positive effects on reaching information quickly. 4 classroom teachers did not express any opinion about the concerns. 12 classroom teachers stated that the biggest concern was that it would make students lazy and ready-made. 7 classroom teachers stated that digital addiction would increase and make students more dependent on the screen, 2 classroom teachers stated that the interaction between teachers and students would decrease, 2 classroom teachers stated that misinformation would spread, and 3 classroom teachers stated that unconscious use would occur. One classroom teacher each expressed concerns such as devaluation of the teaching profession, increase in frauds, distraction of students, increase in privacy violations and job losses. The opinions of some classroom teachers on the subject are as follows:

"Since artificial intelligence is an endless world, I believe that children should be used within certain limits. Like every technological development, if it is used in a beneficial way, it provides useful and fast access to information." T13

"I have concerns such as distraction in students, laziness due to easy access to information, inability to access new information due to lack of research." T36

"I think that individuals' cognitive and social skills will decrease due to over-dependence on artificial intelligence." T7

"I think that individuals' cognitive and social skills will decrease due to over-dependence on artificial intelligence." T11

CONCLUSION DISCUSSION and RECOMMENDATIONS

As a result of the analyses, it was seen that only two of the classroom teachers participating in the study received a training on artificial intelligence, while the majority of them did not receive any training on this subject. Nearly half of the classroom teachers stated that they never used artificial intelligence in their lessons, while the other half stated that they rarely and frequently used artificial intelligence. Very few of the classroom teachers stated that the effect of artificial intelligence on the education and training environment would be negative, while the majority stated that it would have a positive effect in general. Classroom teachers stated that they use artificial intelligence mostly in the field of education. In the field of education, they stated that they use it in preparing visual and auditory presentations, concretization, obtaining information, research-investigation, lecturing, and material production. In addition, they stated that they also used artificial intelligence in preparing photos/pictures, banking transactions, cleaning, social media and daily life tasks. Again, classroom teachers stated that they have concerns that if artificial intelligence is brought into the education environment, it will accustom students to laziness / readiness, there will be a decline in academic achievement, screen and digital addiction will increase, the interaction between teacher and student will decrease, it may cause distraction in students, and misinformation may become widespread. Artificial intelligence is rapidly spreading in many areas of life and plays an important role in the transformation process of societies. This advancement of technology contributes to the formation of new life models and the interaction between humans and machines to gain a different dimension. However, the risks associated with this transformation should not be ignored. The proliferation of artificial intelligence may have greater and deeper impacts on the daily lives of individuals. In particular, issues such as data security, ethical issues and social changes should be carefully addressed and responsible use of this technology should be ensured (Yılmaz, 2021).

Chen et al. (2020). evaluated the impact of artificial intelligence on education in their study. The research revealed that artificial intelligence has been adopted and used in various forms in education. While artificial intelligence was initially limited to computer technologies, over time it has transitioned to web-based intelligent education systems and online platforms. In later stages, technologies such as embedded computer systems, humanoid robots and web-based chatbots were used to enable instructors to perform tasks independently or in collaboration with instructors. Thanks to these platforms, teachers were able to perform administrative tasks such as reviewing and grading students' assignments more effectively and efficiently, improving the quality of their teaching. Moreover, thanks to the machine learning and adaptive features of AI, curricula and content are tailored and personalized to students' needs. This enhanced students' learning experience, promoted adoption and improved the overall quality of learning. Yurtseven & Oğuz (2016) emphasized the potential of AI in data analysis and student performance monitoring and stated that AI-supported systems can offer customized learning experiences by analyzing students' learning styles.

Artificial intelligence applications in education and training are becoming increasingly important. Teachers and students should be encouraged to use these technologies in a conscious and controlled manner. One of the biggest advantages of AI is that it offers a learning environment that suits students' individual abilities and learning speed. This increases the efficiency of the educational process by enabling students to participate in lessons when they feel ready. AI-supported educational tools can use various strategies to increase student interaction and make learning processes more effective. In particular, AI applications can support the principles of multiple intelligences theory by providing customized content according to students' individual learning styles. Teachers can analyze student performance through AI-based systems and enrich course content accordingly (Gün & Şahin, 2014). The use of artificial intelligence in education has paved the way for the development of more creative activities and the creation of better technology-supported learning environments. However, AI is used not only in learning processes but also in administrative tasks such as preparing course schedules, managing student applications and enrollments. It is also an effective tool in areas such as budgeting and resource management. The use of AI-based systems will improve the overall efficiency of schools, as well as strengthen the ability to respond more quickly to the needs of students. This technology provides a significant transformation in both learning and management processes in the field of education (Koç, 2024).

Throughout human history, the desire to access and discover knowledge has been one of the cornerstones of development and progress. This curiosity and desire for research has continuously increased the demand for technology and made access to information more important day by day. With the 21st century technological revolution, advanced systems such as artificial intelligence have been integrated into many areas of our lives. This technological transformation has made significant contributions to many sectors, from decision-making to education, from transportation to health, from security to the justice system, and has enabled public services to operate more efficiently. However, the challenges that arise with this progress should not be ignored. In particular, issues such as security, ethics, privacy and responsibility have become important issues that need to be carefully addressed with the proliferation of artificial intelligence. While artificial intelligence technologies benefit societies, it is of great importance to control potential risks (Sözen, 2024).

Participants expressed various advantages and potential concerns that AI-supported educational technologies offer in their teaching processes. In particular, the fact that these technologies provide students with individual learning experiences, track their academic performance and offer personalized feedback created a generally positive perception. However, the potential of AI to support learning diversity and make course materials more engaging was also emphasized. However, some participants stated that AI applications should not reduce the guidance and interaction role of teachers. This view highlights that technology should be used as a tool that strengthens the teacher-student relationship while providing students with flexible and adaptive learning opportunities. In this direction, the use of artificial intelligence in collaboration with teachers while integrating it into the education system can make the learning experience more efficient by increasing in-class interaction (Alemdar et al., 2023).

Artificial intelligence is a powerful tool with the potential to transform learning processes in education. It helps students reach their highest potential by providing dynamic and flexible learning environments that are tailored to their individual needs and learning styles. Automated assessment and feedback systems reduce the workload of teachers and make learning processes more efficient by enabling students to receive feedback faster and more effectively. Thanks to data analytics, student performance is tracked in detail, strengths and weaknesses are identified and personalized education plans are created accordingly. This enables more informed and effective decisions to be made in education systems. AI also increases student motivation by making learning experiences more engaging with technologies such as interactive learning tools, digital assistants and virtual reality. Increasing accessibility by overcoming language barriers in multilingual education environments with language learning and translation

services, artificial intelligence makes significant contributions to both teachers and students in education (Temur, 2024).

In the near future, it is expected that artificial intelligence will be more integrated into the education system and gain a wider place in educational policies. In this direction, it is important to conduct more research to understand the impact and role of artificial intelligence in education. In addition, it is clearly seen that strategic planning should be developed for the effective inclusion of artificial intelligence in educational processes (Oruç et al., 2024). Artificial intelligence applications used in education clearly show how important the benefits of this technology are. Research should be conducted for the effective use of these applications and both students and teachers should be encouraged to use AI tools consciously. In this way, further development of AI-supported learning programs will be possible. AI should not only support learning processes, but should also be actively used in other areas such as administrative work and teaching. The active role of this technology in different educational processes can contribute to making education systems more efficient and effective (Uzun et al., 2021).

Recommendations

- ✓ Artificial intelligence-supported systems can provide content tailored to students' individual learning speeds and needs. Thus, everyone can receive education according to their own level.
- ✓ AI-supported tools can be developed to facilitate teachers' lesson planning, student assessment and feedback processes. This allows teachers to work more efficiently.
- ✓ AI solutions can be created that track students' academic achievements and identify their strengths/weaknesses and provide appropriate support mechanisms.
- ✓ AI-supported language translation and language learning tools can be used in multilingual education environments, making foreign language learning more accessible.
- ✓ Thanks to artificial intelligence, exam and homework assessments can be automated, reducing the workload of teachers and enabling students to receive faster feedback.
- ✓ Technologies such as virtual reality and augmented reality can be used to allow students to experience lessons interactively.
- ✓ To encourage the ethical use of AI in education, trainings should be organized to raise students' awareness on digital security and data privacy.
- ✓ Regular training programs should be prepared for teachers to use AI technologies effectively. This will help teachers to integrate the technology more consciously into their lessons.
- ✓ Administrative processes such as course schedules, student registrations, budgeting and exam management can be optimized with AI.

These recommendations can make the education system more efficient, accessible and student-oriented. The correct application of artificial intelligence in education will contribute to students being more successful and teachers working more effectively.

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