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**THE ROLE OF ARTIFICIAL INTELLIGENCE IN K-12 ENGLISH
LANGUAGE TEACHING: TEACHERS' PERCEPTIONS AND
EXPERIENCES**

Master's Thesis

AYŞE GÖKÇEN İZCİ

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February – 2026

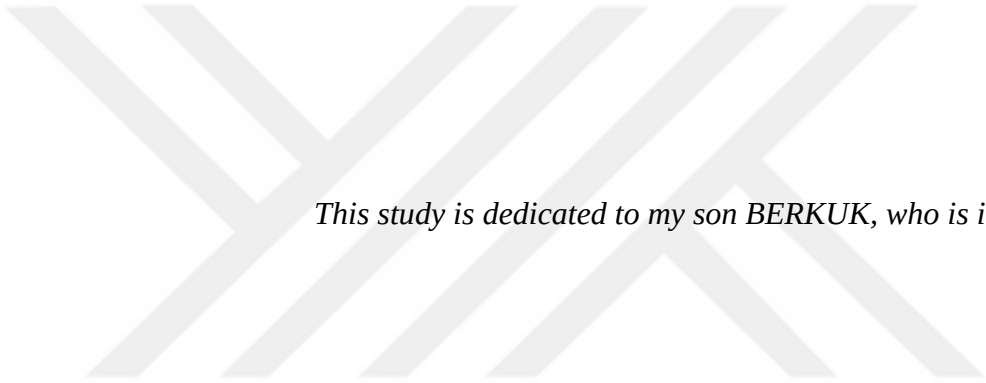
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YAPAY ZEKÂNIN K-12 İNGİLİZCE ÖĞRETİMİ SINIFLARINDAKİ
ROLÜ: ÖĞRETMENLERİN GÖRÜŞ VE DENEYİMLERİ

Hazırlayan
Ayşe Gökçen İZCİ

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This study is dedicated to my son BERKUK, who is in heaven

TEZ ONAY SAYFASI

Ayşe Gökçen İZCİ tarafından hazırlanan “THE ROLE OF ARTIFICIAL INTELLIGENCE IN K-12 ENGLISH LANGUAGE TEACHING: TEACHERS’ PERCEPTIONS AND EXPERIENCES” (YAPAY ZEKÂNIN K-12 İNGİLİZCE ÖĞRETİMİ SINIFLARINDAKİ ROLÜ: ÖĞRETMENLERİN GÖRÜŞ VE DENEYİMLERİ) başlıklı çalışma aşağıdaki jüri tarafından 19/01/2026 tarihinde yapılan savunma sınavı sonucunda oy birliği/oyçokluğu ile Amasya Üniversitesi Sosyal Bilimleri Enstitüsü Yabancı Diller Eğitimi Ana Bilim Dalında Yüksek Lisans Tezi olarak kabul edilmiştir.

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ETİK BEYAN SAYFASI

Tezimin içerdiki yenilik ve sonuçları başka bir yerden almadığımı ve bu tezi Amasya Üniversitesi Sosyal Bilimler Enstitüsünden başka bir bilim kuruluşuna akademik gaye ve unvan almak amacıyla vermediğimi; tez içindeki bütün bilgilerin etik davranış ve akademik kurallar çerçevesinde elde edilerek sunulduğunu, ayrıca tez yazım kurallarına uygun olarak hazırlanan bu çalışmada kullanılan her türlü kaynağa eksiksiz atıf yapıldığını, bu tezde sunduğum çalışmanın özgün olduğunu bildirir, aksinin ortaya çıkması durumunda aleyhime doğabilecek tüm hak kayıplarını kabullendiğimi beyan ederim.

19/01/2026

Ayşe Gökçen İZCİ

İmza

ABSTRACT**THE ROLE OF ARTIFICIAL INTELLIGENCE IN K-12 ENGLISH LANGUAGE
TEACHING: TEACHERS' PERCEPTIONS AND EXPERIENCES**

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Amasya University, Institute of Social Science

Department of Foreign Language Education, M.A., February/2026

Supervisor: Asst. Prof. Dr. Hayriye AVARA

This mixed-method study examined the perspectives, attitudes and preparedness of English Language teachers about Artificial Intelligence (AI) tools into ELT. Teachers in K–12 schools in the Central Black Sea Region of Turkey, such as Amasya, Samsun, Tokat, and Çorum, are the main subjects of the study. The study intends to determine the demographic elements impacting teachers' preparedness for AI adoption as well as investigate the perceived advantages and difficulties of implementing AI applications in the classroom. The quantitative data were collected using the questionnaire titled “Exploring Teachers’ Perceptions Toward the Integration of AI Tools in the Language Classroom”, originally developed by Rusma Kalra. Written permission to use and adapt the instrument was obtained from the author prior to data collection. Along with demographic data, the poll includes sections that gauge attitudes, perceived benefits, difficulties, and readiness levels for integrating AI. SPSS (version 26) was used for the analysis of quantitative data. Participants' responses were compiled using descriptive statistics, and the influence of demographic factors was assessed using inferential tests including one-way ANOVA and independent samples t-tests. Cronbach's alpha reliability coefficients were used to verify the scales' internal consistency. In the qualitative phase, semi-structured interviews were conducted with a subset of teachers to gain a deeper understanding of their experiences and perceptions of AI tools in language teaching. The interview questions were prepared by the researcher with the assistance of ChatGPT and validated by three experts. The qualitative data were analyzed through thematic analysis using NVivo 15 software. The coding process identified major themes related to teachers’ perceived benefits, challenges, attitudes, and pedagogical implications of AI integration. The integrated analysis of qualitative and quantitative data shows that while English language teachers recognize the potential benefits of Artificial Intelligence for instructional support, their readiness to integrate AI remains limited due to

pedagogical concerns, lack of formal training, and infrastructural constraints.

Keywords: artificial intelligence, foreign language education, teachers' perceptions



ÖZET

YAPAY ZEKÂNIN K-12 İNGİLİZCE ÖĞRETİMİ SINIFLARINDAKİ ROLÜ: ÖĞRETMENLERİN GÖRÜŞ VE DENEYİMLERİ

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Danışman: Dr. Öğr. Üyesi Hayriye AVARA

Bu karma yöntemli çalışma, İngilizce öğretmenlerinin yabancı dil öğretiminde (ELT) yapay zekâ (YZ) araçlarının kullanımına yönelik bakış açılarını, tutumlarını ve hazırlık düzeylerini incelemektedir. Araştırmanın odağında, Türkiye'nin Orta Karadeniz Bölgesi'nde (Amasya, Samsun, Tokat ve Çorum illerinde) görev yapan K-12 düzeyindeki İngilizce öğretmenleri yer almaktadır. Çalışmanın amacı, öğretmenlerin YZ uygulamalarını sınıf ortamında kullanmaya ilişkin algıladıkları avantajlar ve karşılaştıkları zorlukları belirlemek, ayrıca YZ benimseme konusundaki hazırbulunuşluklarını etkileyen demografik faktörleri ortaya koymaktır. Nicel veriler, Rusma Kalra tarafından geliştirilen "Exploring Teachers' Perceptions Toward the Integration of AI Tools in the Language Classroom" başlıklı anket aracılığıyla toplanmıştır. Veri toplama sürecinden önce, anketin kullanımına ve uyarlanmasına yönelik yazılı izin, orijinal yazarından alınmıştır. Anket, demografik bilgilere ek olarak öğretmenlerin tutumlarını, algılanan faydaları, karşılaşılan zorlukları ve YZ entegrasyonuna yönelik hazırbulunuşluk düzeylerini ölçen bölümlerden oluşmaktadır. Nicel veriler SPSS (sürüm 26) programı kullanılarak analiz edilmiştir. Katılımcıların yanıtları betimsel istatistiklerle özetlenmiş, demografik değişkenlerin etkisini incelemek amacıyla tek yönlü ANOVA ve bağımsız örneklem t-testi gibi çıkarımsal istatistiksel testler uygulanmıştır. Ölçeklerin iç tutarlılığı Cronbach alfa güvenirlik katsayılarıyla doğrulanmıştır. Nitel aşamada, öğretmenlerin YZ araçlarına ilişkin deneyimlerini ve algılarını daha derinlemesine anlamak amacıyla öğretmenlerin bir alt grubuyla yarı yapılandırılmış görüşmeler yapılmıştır. Görüşme soruları, araştırmacı tarafından ChatGPT'nin desteğiyle hazırlanmış ve üç uzman tarafından geçerliği onaylanmıştır. Nitel veriler NVivo 15 yazılımı kullanılarak tematik analiz yöntemiyle incelenmiştir. Kodlama süreci sonucunda, öğretmenlerin algıladıkları faydalar, karşılaştıkları zorluklar, tutumlar ve YZ entegrasyonunun pedagojik yansımalarıyla ilgili temel temalar belirlenmiştir. Nitel ve nicel verilerin bütünsel analizi, İngilizce öğretmenlerinin

yapay zekânın öğretimi destekleme potansiyelini kabul ettiklerini; ancak pedagojik kaygılar, resmî eğitim eksikliği ve altyapısal sınırlılıklar nedeniyle yapay zekâyı öğretim süreçlerine entegre etmeye yönelik hazırbulunuşluk düzeylerinin sınırlı kaldığını göstermektedir.

Anahtar Kelimeler: öğretmen algıları, yabancı dil eğitimi, yapay zekâ



FOREWORD

I would like to express my sincere gratitude to my esteemed supervisor, Asst. Prof. Dr. Hayriye AVARA, who guided my study with her knowledge, support, and guidance at every stage of my thesis writing process. I also extend my heartfelt thanks to the distinguished academics who contributed to the scientific rigor of this study through their expert opinions, as well as to all the teachers who voluntarily participated in the surveys and interviews.

I would like to express my deepest appreciation to my family, who supported me throughout the thesis process with their patience, understanding, and love. This study could not have been completed without their support.

I hope that this study will contribute to future research and educational policies regarding the integration of artificial intelligence in English language teaching.

Ayşe Gökçen İZCİ

19/01/2026

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ABBREVIATIONS

Abbreviations	Explanations
AI	Artificial Intelligence
ELT	English Language Teaching
K-12	Kindergarten to Grade 12
MoNE	Ministry of National Education
TAM	Technology Acceptance Model
TPACK	Technological Pedagogical Content Knowledge
UTAUT	Unified Theory of Acceptance and Use of Technology
YZ	Yapay Zekâ

CHAPTER I

1. INTRODUCTION

Lots of changes occurred in different parts of the life like communication, business, healthcare and very importantly education with the help of AI. New approaches to innovations in education such as automated assessment, data-driven teaching, personalized learning, and adaptive feedback have been developed in recent years through AI (Holmes et al., 2022; Zawacki-Richter et al., 2019). Traditional classroom approaches have been changed by AI tools which offer student-centered and technology-supported teaching methods (Li & Ni, 2021).

Despite these advancements, the effective integration of AI into classroom practice remains a complex challenge. Teachers play a central role in mediating the use of technology in education, and their perceptions, attitudes, and readiness significantly influence whether and how AI tools are adopted in instructional settings (Kessler, 2018; Chen et al., 2023). However, while the global literature on AI in education is growing rapidly, empirical research focusing on language teachers, particularly at the K–12 level and in regional contexts such as the Central Black Sea Region of Türkiye, remains scarce.

Providing timely feedback, supporting vocabulary development, conducting assessment, and fostering learner autonomy are the essence pedagogical practices which play important roles in English language teaching. Nowadays the progress of AI tools in education is growing but it still depends on the teachers' perceptions and the classes' needs and this issue hasn't been searched deeply until now.

Digital transformation and technological literacy are seen as important issues in education by the education policies in Türkiye (MoNE, 2023). On the other hand the success of this issue depends on the perceptions and abilities of the teachers who use AI in their classes. If the teacher cannot use it, it isn't important the smartboard has AI tools or not. Besides nowadays most of the teachers face some difficulties which interfere the effective use of AI in their classes like some technological or some educational difficulties (Demir & Kaya, 2024). Therefore the policy makers have to be familiar with the teachers' perceptions and preparedness about AI, if they want to be sure the needs, the benefits or the harms of the AI in classes.

In this study the technology integration and adaptation frameworks were focused on which the teachers' beliefs, attitudes and pedagogical practices and these are the Technology

Acceptance Model (TAM), the Unified Theory of Acceptance and Use of Technology (UTAUT), and the Technological Pedagogical Content Knowledge (TPACK) framework.

There are very limited studies in Türkiye about the teachers' beliefs, attitudes and preparedness about AI, on the other hand all over the world the AI is being a part of education (Aydın & Güngör, 2022; Zawacki-Richter et al., 2019). However some of these studies are only using quantitative method or some of them are only using qualitative method. There is a need for mixed method studies to be able to deeply see the main issues (Creswell & Plano Clark, 2018; Holmes et al., 2022; Tondeur et al., 2017).

In this study the aim is to explore the perceptions, beliefs and readiness of teachers toward the integration of AI tools in language teaching. It is said above that there is a gap about the mixed method studies in this area and with this viewpoint the study struggle to fill this gap by using mixed method. The study was conducted in Amasya, Çorum, Samsun and Tokat provinces and it aimed to reach English teachers in these cities' K- 12 schools. Besides, the study aimed to open a new window to the authorities, policy makers and the new researchers about the teachers' perceptions, attitudes and preparedness about the usage of AI in the classes.

1.1. The Purpose of the Study

This study purposes to explore the English teachers' perceptions, attitudes and readiness about AI's integration to the language classes in K-12 schools. Besides, the study aims to show the importance of AI use in language classes and explore whether it is useful or not.

1.2. The Significance of the Study

Turkey's 2023 Education Vision, published in 2018, supports the use of online learning and mobile technologies in foreign language education (MoNE, 2018). At the same time, the increasing use of AI tools across all segments of society in recent years makes their use as a supportive element in education an undeniable reality (Holmes et al., 2022; Zawacki-Richter et al., 2019). As traditional methods of teaching languages continue to face criticism, the need for the use of AI tools in language education has been increased due to the development of AI applications (Godwin-Jones, 2018; Li & Ni, 2021).

This research aims to add to existing literature around teachers' perceptions of using AI tools using the English language to teach languages; as well as providing a comprehensive

and contextually informed understanding of how teachers perceive the use of AI tools in English language education, it uses a mixed-methods approach to combine both quantitative and qualitative data (Creswell & Plano Clark, 2018). The aim is to include a regional focus using the Central Black Sea Region of Türkiye, as this region has been underrepresented in previous research in this area (Aydın & Güngör, 2022; Yılmaz, 2023). Furthermore, the findings will provide a comprehensive, evidence-based foundation for those policymakers and educational authorities (including the Ministry of National Education) as they design and deliver needs-based continuing education programmes to develop digital competencies and readiness among teachers for using artificial intelligence tools. The findings of this research will assist in providing data-driven strategies for the development of policy designed to promote equitable and sustainable use of artificial intelligence in the education system nationally (Selwyn, 2019; Holmes et al., 2022).

1.3. Limitations of the Study

This study can be seen limited from the different viewpoints. Firstly, the study is limited because of the area it is conducted. The study was conducted in four cities of Black Sea Region. These cities are Amasya, Çorum, Samsun and Tokat. These are known as cities of Central Black Sea Region. This limitation can be seen important because it is about the generalizability of the findings of the study.

On the other hand, the participants are accepted to answer the questions honestly but maybe some of them gave answers by feeling not sure about their answers. It can be seen as a limitation because we have to believe the participants' answers.

The other limitation is that this study struggled to explore the teachers' their own perceptions, attitudes and readiness, not the classroom outcomes about AI so the study cannot give us the classroom situation while using AI.

Finally, given the rapidly evolving nature of artificial intelligence technologies, the findings of this research should be interpreted in light of the time at which the data were collected. Future developments in AI applications, policies, and teacher training programs may influence teachers' attitudes and render some findings context-dependent.

1.4. Assumptions of the Study

This study is built on a number of assumptions regarding the guidelines used when designing the research and in interpreting the data collected. First and foremost, that those

selected as participants for this study rightly completed the questionnaire and answered the interview questions honestly with the intent of conveying their true perspective, attitude, and experience with the incorporation of artificial intelligence into the English language classroom over the course of one 2nd (or K–12) school year. Second, which the sample selected for this study, from among those who worked as teachers of English in the Central Black Sea Region of Turkey (composed of Amasya, Samsun, Tokat, and Çorum), is representative of others (teachers of English) in similar educational settings in Turkey. Third, participants will have an understanding of the concept of "artificial intelligence" and those tools that could be employed for educational purposes, so that they may appropriately assess the positive or negative ramifications associated with the application of artificial intelligence within the educational setting (of course, from both a positive/negative point of view). Fourth, the instruments which were used for this study (the questionnaire and the semi structured interview form) are assumed as reliable and valid to collect data about teachers' beliefs, attitudes and readiness about AI's integration to the K- 12 language classrooms.

Lastly some situations like support of the institutes, access to technology and infrastructure of the schools are assumed as be capable of influencing the teachers' perceptions, attitudes and readiness but not fully because these perceptions are shaped by a combination of personal, professional and contextual factors.

CHAPTER II

2. THEORETICAL FRAMEWORK AND LITERATURE REVIEW

This part is underlying of the study by combining the theoretical viewpoints and the studies which are newly coming about the use of AI in the language classrooms from all over the world. The study's theoretical framework is presented with the help of the Technological Pedagogical Content Knowledge (TPACK) framework and the Technology Acceptance Model (TAM). On the other hand in the literature review part there are studies which explored the use of AI in education until now and also studies which were conducted on the regional contexts. If we look at these sections as a whole it can be said that this part is struggling to fill in the gaps of the literature by exploring the teachers' beliefs, attitudes and readiness about AI's integration to the language K-12 classes.

2.1. Theoretical Framework of the Study

The two models of teacher technology adoption have been based two theoretical frameworks on this study, the first one is Technological Pedagogical Content Knowledge (TPACK) and second one is the Technology Acceptance Model (TAM). This study has examined the perceptions, attitudes and readiness of the language teachers in K-12 schools about the AI's use in the classes. On the other hand the study also has examined whether the teachers' perceptions, attitudes and readiness are important in the AI based class or not. Addingly, the impact of institutional and sociocultural factors on the acceptance of technology in K-12 education in the Central Black Sea Region has been considered with the help of the TPACK framework.

The one of the main models which is a keystone for this study is the Technology Acceptance Model (TAM). It was created by Davis (1989) and it depends on the idea that the perceived utility (PU) and perceived ease of use (PEOU) are the key factors that influence users' acceptance of technology. If teachers think that the usage of the technology in the classes is easy and necessary for the education, they are eager to using the technology in the classes. Some of the studies have changed the TAM to be able to better comprehend AI integration and it has done to look at teachers' attitudes regarding digital tools (Teo, 2011; Venkatesh & Bala, 2008).

The Unified Theory of Acceptance and usage of Technology (UTAUT) (Venkatesh et al., 2003) expands on TAM by integrating social effect and paving factors as predictors of

behavioral contemplation and actual technology usage. This model is also beneficial for analyzing how teachers' readiness for integration of AI in their classes is affected by the peer norms, institutional support and resource acceptability.

This study also depends on the Technological Pedagogical Content Knowledge (TPACK) framework. TPACK is based on the idea that to be able to be successful in technology-based education, the content knowledge, pedagogy and technology must be tackled with together (Mishra & Kohler, 2006). According to this approach if teachers have enough technological and pedagogical knowledge to use the AI in classes, AI tools can enhance the language teaching in classes.

As a last point it can be said that the understanding of teachers' eagerness to adopt AI based technologies is acknowledged by theories relating to professional competence and teachers' readiness. Consciousness, self-confidence and adaptability can be seen as cognitive, affective, and behavioral aspects of readiness.

TPACK, TAM and UTAUT frameworks have been selected for this study because they are aligned with the aims of this study theoretically and methodologically.

Firstly, this study investigates whether teachers perceive AI as beneficial and easy to use in language classrooms and for this area TAM is very appropriate to understand individual acceptance processes.

Second UTAUT is appropriate for this study because it expands TAM by adding contextual and social factors (Venkatesh et al., 2003). These factors are meaningful for the regional and institutional characteristics of K–12 schools in the Central Black Sea Region and they allow the study to investigate how organizational resources, peer norms, and infrastructure shape teachers' readiness to adopt AI.

Lastly TPACK is also appropriate to evaluate teachers' professional readiness and classroom-level application of AI tools in language teaching because TPACK explains whether teachers possess the necessary technological, pedagogical, and content knowledge to effectively implement AI in instructional practice (Mishra & Koehler, 2006).

As a result, this study's theoretical underpinnings combine the TAM, UTAUT, and TPACK frameworks to offer a multifaceted view of instructors' attitudes, perceptions, and preparedness for integrating AI.

2.2. Literature Review

New pedagogical paradigms in language instruction have resulted from the substantial

transformation of teaching and learning processes brought about by the increasing integration of Artificial Intelligence (AI) technologies into education (Holmes et al., 2022; Zawacki-Richter et al., 2019). Artificial intelligence (AI) solutions including intelligent tutoring systems, automated feedback platforms, and adaptive learning applications have created new avenues for learner autonomy, individualized education, and data-driven decision-making in the context of English language teaching (ELT) (Godwin-Jones, 2018; Li & Ni, 2021; Chen et al., 2020). Yet the attitudes of teachers toward the use of technology in classrooms, along with their perspective, desire to use technology in the classroom, and willingness to do so, are all key factors affecting whether or not technology is used in classrooms. The body of research to date has evaluated the positive aspects (e.g. heightened student learning efficiency and engagement) and the negative aspects (e.g. lack of adequate training for teachers; dilemmas regarding morality; lack of infrastructure) associated with utilising technology in schools; however, this type of evaluation was not specifically related to AI.

As this analysis will address the distinctive educational context of the Central Black Sea of Turkey, where institutional support and technological infrastructure may vary in terms of impact on the extent to which AI is being utilised in K-12 English language classes, it will also synthesize various global perspectives on product technology, and thus provide an understanding of how teachers perceive the use of AI technology for teaching and learning. Additionally, this section points out both theoretical and empirical gaps within the body of previous literature, which this current mixed-methods study is intended to fill in through a thorough review of all previous research and the literature that were reviewed for this study.

The use of reasoning and prediction power, which are traits of human intelligence, by machines to solve complex problems and make decisions while taking changing circumstances into consideration is known as artificial intelligence, which is generally defined as intelligence displayed by machines (Obschonka & Audretsch, 2020). Artificial intelligence research accelerated after McCarthy coined the term and pronounced the concept in 1956 (Ertel, 2011). According to Öztemel (2003), artificial intelligence is the capacity of a computer or a machine under computer control to carry out mental operations like reasoning, inference, generalization, and learning from prior experiences—all of which are regarded as human behaviors. The goal of the scientific field of artificial intelligence is to create computers that can be taught to think like people. The model concept for this path is the human brain. The human brain is made up of incredibly intricate algorithms and systems. Scientists who are interested in artificial intelligence study the nature and operation of these systems and algorithms. The investigations' findings led to an attempt to use algorithms to

explain this system's design to computers.

When John McCarthy hosted the first academic conference on the topic in 1956, he first used the term artificial intelligence. However, the investigation into whether or not machines are capable of true thought started much earlier. Vannevar Bush put forth a system that enhances people's own knowledge and comprehension in his groundbreaking book *As We May Think*. Five years later, Alan Turing published a paper discussing the idea that machines could mimic people and perform intelligent tasks like playing chess.

A system that mimics the human brain to perform specific tasks and can iteratively improve itself through experience gained from the task is known as artificial intelligence. Artificial intelligence, according to Gordon (2011), is an analytical life set that seeks to mimic life.

Intelligence, according to McCarthy (2004), is "a computational part of the ability to achieve goals in the world." Artificial intelligence is defined as "the science and engineering of making intelligent human-like machines, especially intelligent computer programs." Humans, many animals, and some machines all possess varying types and degrees of intelligence. This definition can be explained as follows. Therefore, a computer can be considered artificially intelligent when it exhibits human-like abilities like reasoning, problem-solving, inference, and generalization—that is, when it employs advanced cognitive skills. As mentioned earlier the concept is relatively new so different definitions have emerged in different fields and disciplines.

Slagle, for instance, referred to AI as "heuristic programming" (Nabiyev, 2012). Similar to this, Axe uses AI as a tool to solve complicated issues. AI is recognized as an intelligent program that can generate responses to both new situations and problems (Nabiyev, 2012). His research on artificial intelligence puts him at the forefront of the literature. The goal of artificial intelligence, according to Nils Nilsson (1990), is to replicate natural intelligence.

Numerous scientists have been researching artificial intelligence since the term was first used. Artificial intelligence technologies are now a part of our lives because of the advancements in technology over the years. These technologies will be used at every stage of the projects that are being worked on and targeted, according to the current situation (Güllüpcinar et al., 2013).

2.2.1. The History of Artificial Intelligence

Artificial intelligence is developing and evolving in tandem with the transistors that make up computers. This statement should not, however, imply that artificial intelligence is solely associated with computer technology. Conversely, artificial intelligence is a field that is directly related to many other scientific fields, including psychology, engineering, and industry, and is structured to meet the needs of each of them. Under the heading of "the role of machines in imitating life," artificial intelligence has even been examined philosophically (Doğan, 2002).

The 1940s saw the first indications of artificial intelligence. McCulloch and Pitts created the "Boolean Circuit Model of the Brain" in 1943. This model is merely predicated on a theory that, under specific assumptions, provides a mathematical explanation of how neurons function in the brain. Since it outlines and clarifies the fundamentals of how the brain functions, this theory is regarded as the most significant development in artificial intelligence. By the 1948s, Shannon (1950) had demonstrated that computers could be used to play chess and prove intricate mathematical theorems within the parameters of specific algorithms. This was followed in 1950 by British mathematician Alan Turing, who posed the question, "Can machines think?" in a paper published in the philosophical journal *Mind*. Turing made the claim that "skills like decision-making and problem-solving are as available as logic" in this paper (Turing, 1950). Why can't machines use their knowledge to solve it if humans can? and searched for it. This paper proposed the "Turing Test," which will be widely used in the future.

However, during this time (1950), one of the most crucial prerequisites for "intelligence" was a computer. They were not yet able to "store information." They were limited to simple tasks like carrying out commands that were uploaded. Because of this, it can be claimed that artificial intelligence was "silent" until 1956 and made no advancements.

Different studies in the field of artificial intelligence emerged in the 1960s as computers became more efficient and easier to store information. In addition to storing and processing information, computers were able to relate information during the 1980s. The backpropagation learning algorithm, initially discovered in 1969 by Bryson and I-10, was reimagined by at least four distinct groups in the mid-1980s. The algorithm was used to solve numerous learning problems in psychology and computer science, and there was a lot of excitement when the results were widely shared in the *Parallel Distributed Processing* collection (Rumelhart & McClelland, 1986). The "expert systems" program, created by

Edward Feigenbaum during the same time period, can simulate a procedure akin to expert human decision-making mechanisms. Artificial neural networks, which are memory-independent, communication-connected information processing structures that resemble the human brain, gave artificial intelligence in the field of cybernetics a new dimension in the 1990s. Artificial intelligence has readily found a wide range of application areas in the Big Data era of today. Artificial intelligence applications are used successfully, particularly in the banking, technology, and entertainment sectors (Elmas, 2007).

2.2.2. Artificial Intelligence in Education

Artificial Intelligence is used in different parts of our life and one of them is education (Holmes et al., 2022; Zawacki-Richter et al., 2019; UNESCO, 2021). In education there are some different participants for the continuum. Especially learners (students) and educators (teachers) should be aware of different pros and cons of the AI for their education process. With the effect of the pandemic time nearly every student and teacher had to use the computer technologies better. This situation also raised the awareness of the teachers and students about the using technological devices in education. It can be seen limited but in the literature, there are some studies about the AI use in education. The number of studies conducted in Turkey has been steadily increasing since 2010, with a notable surge in 2015. Prior to 2010, there were fewer studies on artificial intelligence (AI) (Tekin, 2023; Yılmaz & Kaleci, 2025; Dağdemir, 2024). However, as new technologies began to use AI more frequently as the main enabling technology with industry 4.0, research on AI increased (Duan, Edwards, & Dwivedi, 2019).

Three significant historical occurrences, according to Edward Fredkin, professor at Carnegie Mellon University and director of the Artificial Intelligence Laboratory at the Massachusetts Institute of Technology (MIT), have taken place. The universe's creation is the first of these, followed by the emergence of life. The development of artificial intelligence is the third event, which he considers to be just as significant as the beginning of life (Copeland, 1993). The roles and domains in which humans are required have changed as a result of the advancement of artificial intelligence. According to Tuğluk & Gök-Çolak (2019), humans, who relied on hunting and gathering for survival in the beginning of time, are expected to be able to collaborate with machines that possess artificial intelligence and utilize and create artificial intelligence systems in order to survive in the modern world. The advancement of technology and artificial intelligence has made it feasible to pursue education without regard

to time or location. Additionally, options like project-based learning, personalized learning, and free choice (flexible service) have been incorporated into education systems as a result of artificial intelligence's integration. These days, augmented reality, virtual reality, online learning, and distance education are the main applications for artificial intelligence systems (Tuğluk & Gök-Çolak, 2019).

It has been noted that artificial intelligence technologies expand the opportunities for teaching and designing educational experiences, as well as the learning interactions of all students worldwide (Popenici & Kerr, 2017). According to Popenici & Kerr (2017), artificial intelligence in education refers to computer systems that are capable of learning, adapting, synthesizing, self-correcting, and using data for complex processing tasks, among other human functions. As artificial intelligence systems have grown in importance, the Organization for Economic Co-operation and Development (OECD) has added to the Programme for International Student Assessment (PISA) the measurement of digital literacy skills, digital citizenship, information fluency, technological literacy, creativity, innovative thinking, critical thinking, solution generation, and decision-making (Günay & Şişman, 2019).

Research on artificial intelligence (AI) in education grew quickly between 2018 and 2023, focusing on both pedagogical adaptation and technological innovation. According to one of the first comprehensive reviews, which included 146 research published between 2007 and 2018, Zawacki-Richter et al. (2019) found that the majority of AI applications were focused on intelligent teaching systems, assessment automation, personalization, and profiling and prediction. However, pedagogical and ethical considerations were still limited within these studies, with most contributions stemming from computer science rather than education disciplines.

Chen et al. (2020) collected empirical research from 2010–2020 and divided the application of AI in education into three primary areas: learning analytics, instructional, and educational administration. They came to the conclusion that although AI technologies can increase efficiency and personalization, their broad acceptance would rely on how tech-savvy and ethical teachers are. Similar to this, Zhai et al. (2021) examined 100 empirical research that were published between 2010 and 2020. There have been a few areas highlighted in past studies (where predominately experimental designs were utilized) as areas where there is a need for more openness in the reporting of findings along with greater alignment between what researchers say about pedagogy as opposed to the methods of experimentation.

In a systematic literature review conducted by Okonkwo & Ade-Ibijola (2021), a total

of 53 studies on educational chatbots were analyzed. The findings indicated that educational chatbots when used in conjunction with learning have a positive effect on engagement and comprehension, but results on motivation and critical thinking are mixed.

A complementary approach to teacher-centered methodology was taken by Çelik et al. (2022). From their analysis of the studies involving the integration of AI into teacher preparation, it was found that most teachers use AI primarily for purposes related to automated assessment, individualized feedback to students, and lesson planning. It should be noted that these studies also provide evidence that pre-service teachers are lacking in their training regarding AI.

In 2023, studies have started to focus on understanding teachers' attitudes and models of acceptance regarding AI technologies, and this situation has changed the literature of AI in education. For example, in their study Chocarro, Cortiñas ve Marcos-Matás (2023) has used the TAM to evaluate the teachers' embrace of the chatbots, and the results have showed that perceived utility of using chatbots is the strongest determinant for this study.

Likewise, according to Cojean et al. (2023), the notable limitations to the extensive use of AI because of the suspense surrounding ethics, bias, and job security were still alive whether teachers know that the AI will help them in education area.

The other study which was conducted by Sütçü and Sütçü (2023) found additional information about the teachers' attitudes toward the use of AI in classes. This study was a qualitative multiple case study and there were 35 English language teachers from Türkiye were participants in this study. They did find that some teachers had expressed concerns regarding plagiarism, dependency, and devaluation of teacher expertise, however roughly 53.6% of these teachers had positive attitudes toward the integration of AI, particularly for use during lesson preparation and language practice.

In conjunction with the studies mentioned above, Labadze et al. (2023) conducted a systematic review of 67 studies involving educational chatbots and identified several benefits associated with the use of chatbots, including task automation and personalized learning; however, they also identified several challenges including accuracy and ethical considerations surrounding the use of chatbots in education.

Artificial intelligence (AI) has experienced rapid growth as a result of Generative AI tools that have recently been introduced, and as a result, these tools have quickly become a major force within education. Along with the above studies, large-scale systematic literature reviews demonstrated that there has been a significant increase in research and application of AI within the education sector, with an increase in focus on the use of data informed

instructional design, adaptive feedback, and individualized learning (Garzón et al., 2025). Additionally, the growth of AI within education is not only a technological one but also brings challenges surrounding the need for organizations to be ready for using AI, ethical considerations associated with using AI, and the capability of teachers to successfully utilize AI (UNESCO, 2023/2025).

Although these benefits increase with pedagogical alignment and teacher support, recent meta-analyses consistently demonstrate that AI-enhanced interventions have a positive impact on learning outcomes, motivation, and engagement (Zhang & Jantakoon, 2025; Qu et al., 2025; Li et al., 2025). These studies also show that outcomes differ by design, level, and domain; the best outcomes come from integrating AI use with clear educational objectives. According to thorough reviews, the benefits are particularly noticeable in outcomes connected to cognitive and personalization, while there is still little data on social-emotional and teacher-centered factors (Garzón et al., 2025).

However, hazards and restrictions are equally important. Policy papers and empirical research usually record issues such data privacy, age-appropriate use, bias, transparency, academic integrity, and over-reliance on technology. Countries should institutionalize a human-centered approach with explicit frameworks for age restrictions, privacy protection, and pedagogical validation, according to UNESCO's Guidance for Generative AI in Education and Research (2023, updated 2025). In a similar vein, the OECD's 2024 and 2025 reports stress that in order to fully utilize AI in education, professional learning and assessment systems must be updated with the idea of "pedagogy giving meaning to technology" in order to reframe teaching as a flourishing, well-supported profession (OECD, 2024; OECD, 2025).

For AI integration in K–12 contexts to be equitable and sustainable, two priorities are essential: (i) focused professional development programs that enhance teachers' digital and pedagogical competencies, and (ii) system-level approaches that address inequality through better support, access, and infrastructure. As per the latest studies, the most common hurdles for educators today are ethical inconsistencies within educational technology, along with opposition from educators, but through joint efforts by concerned stakeholders (such as educational researchers, teachers and edtech developers) to create solutions together is regularly a successful way to approach the integration of these technologies (Garzón et al., 2025; OECD, 2024). Grounded in actual situations from each region, this model allows researchers to develop their understanding of teacher resource development, along with the influences of regional or institutional policies and infrastructure in the Central Black Sea

Region of Turkey, and consequently informs researchers as to how to effectively study the perceptions, beliefs and preparation of teachers when it comes to the integration of technology into their classrooms.

2.2.2.1. Artificial Intelligence in Education in Türkiye

Research in Turkey on Artificial Intelligence (AI) and Education has doubled since 2019. The latest studies (2022-2025) are focused more on teachers, their preparation, ethical concerns of AI, and practical applications of Generative AI in Language Teaching than previous studies which focused primarily on pre-service teachers' perception of AI. This expanding body of research shows the awareness of the Turkish education system toward AI as both, an innovative educational tool, in addition to being seen as a pedagogical strategy.

One of the very first studies to explore the opinions of pre-service teachers towards AI in Education was published by Karadeniz and Aydın in 2019. In their study, while 78% of the respondents considered AI to be a valuable teaching resource, many expressed concerns about the potential impact of AI on future employment opportunities for teachers. Following the initial study, Kaya and Yılmaz (2020) conducted an overview of AI-based educational systems in Turkey. They, too, expressed the need for more educationally based studies on AI, especially in conjunction with other branches of study (Computer Science and Engineering). Likewise, Demir and Çelik (2021), found that the pre-service teachers who are the participants of the study had an understanding of AI, but the level of knowledge differed according to the departments and genders.

Yücel and Turan (2022) conducted a large-scale quantitative study and according to the results of it nearly %60 of the secondary school teachers said that they feel AI could help lesson planning and differentiation of the students. On the other hand, few of them stated precision about the ethical outcomes of data collection or privacy. Similarly, according to Çelik and Yıldız (2023), teachers are generally eager to using AI in their classes, but they have some problems about necessary technical and professional skills and this issue indicates that there is a need for institutional support through professional development and training.

A qualitative case study was conducted with 35 English teachers by Sütçü and Sütçü (2023), and the results of this study showed that over half (53.6 %) of the participants were eager and supportive to integrate AI into their language classes. Several of the participants mentioned about the helper side of AI for the classes like creating course materials and providing personalized evaluations, on the other hand some of them stated concerns like loss

of professional expertise, some ethical problems like plagiarism and students' tendency to use only technology to finish the given works. Almost concurrently with this study, Akın (2023) conducted a study examining the influence of ethical sensitivity on instructors' attitude toward AI and found that instructors' readiness to adopt AI as an instructional tool was positively associated with their level of ethical awareness.

More recent studies have continued focusing on measuring and modelling the perceptions toward AI among instructors. Işık (2025) developed and validated an Instructors' Perception Scale, designed to measure perceptions about AI in Education, based on data collected from 530 instructors. Findings from this study resulted in the identification of three main areas reflected in the final version of the instructor Perception Scale, these areas being: Perceived Usefulness, Ethical Awareness, Readiness. This research supports the argument of how multifaceted and complex adopting AI into education actually is. Finally, in addition to Işık's research, Şimşek (2025), and Kılınç (2024) respectively, focused on secondary and foreign language teacher effectiveness through a focus on examining regional differences in technology resources and institutional oversight as fundamental components for successful applications of AI.

When taken as a whole, Turkish literature shows a consistent progression from conceptual curiosity to practical involvement. Even though most people have good opinions of AI, access inequity, professional preparedness, and ethical awareness continue to be major obstacles. The bulk of research are quantitative, with limited use of mixed-methods or longitudinal approaches. Furthermore, there are not many studies that compare different regions or are related to policies, especially when it comes to English language instruction in grades K–12. Consequently, by filling up these gaps using a mixed-methods approach that investigates teachers' attitudes, perceptions, and preparedness for AI integration in the Central Black Sea Region of Turkey, this study adds to the national and worldwide literature.

2.2.3. Artificial Intelligence in Language Education

Language learning has recently emerged as a frequently studied field. Especially in a globalizing world, the need for language learning is increasing. English as Lingua Franca is being learned by people from all over the world. However, language learning is being more enjoyable and more accessible with the help of AI tools which ease nearly every side of education. Studies show the countless benefits of AI in the literature. One of them is that AI provides individualized learning experiences to the students. It can adjust the unique needs of

each student by finding and concentrating on necessary areas. According to Chik (2021) the individualized approach of AI raises bearing in mind, commitment and motivation. Besides, AI tools enable a wider audience, who may be in underserved or remote areas, by offering scalable solutions to access high- quality language instruction (Luo et al., 2023). AI also can help teachers by automating some managerial duties like grading and tracking progress. This assistance of AI liberates teachers from time wasting duties, and it gives room for more complex teaching issues. In addition to all these, teachers can look after students' progress and adjust the lesson plans according to progresses with the help of real- time analytics of AI (Yang et al., 2022). Language learning has been converted by AI because it provides scalable, personalized and attractive learning opportunities. There is a potential of AI applications like intelligent tutoring systems, speech recognition software and adaptive learning platforms in improving language learning results. Some problems like data privacy, cultural sensitivity and fair access must be resolved to reach AI's full potential. It is possible that AI will be a bigger part in language education by developing and presenting effective and inclusive learning options.

There are several different studies which are about the language learning with the help of AI. Some of them were added in this section. One of them was conducted by Chen and friends (2023) and the study was about the usefulness of AI- based English learning resources and how they affect the teachers' and the students' attitudes toward the lesson. The results showed that AI- based tools greatly enhanced the students' confidence, fluency and pronunciation. The study underlined how crucial interactive interfaces and real-time feedback are to encouraging successful language learning (Chen et al. (2023).

The other current study was conducted by Godwin-Jones, R. (2024). In this study it was explored the role of generative AI in fostering learner autonomy and enhancing collaborative language learning. In the result part it is shown that by facilitating individualized and flexible learning pathways, AI tools improve learner autonomy. Additionally, these tools facilitate distributed agency between AI systems and human educators by supporting collaborative learning environments.

The fields of Intelligent Computer-Assisted Language Learning (ICALL), Automated Writing Evaluation (AWE), Automatic Speech Recognition (ASR), and rule- or statistics-based machine translation were the primary areas of artificial intelligence (AI) in language education between 2010 and 2018. Instead of replacing teachers, studies conducted during

this phase mostly concentrated on the formative feedback capabilities of AWE systems, highlighting their potential to improve writing quality, increase learner autonomy, and lessen writing anxiety. There were other early ASR-based pronunciation systems, albeit with little empirical support. Although there was no empirical evidence of dialogue-based chatbots at the end of the decade, academics noted the need for ethical frameworks for data use and feedback openness as well as explicit pedagogical integration models. The conceptual and technical groundwork for the more complex and data-driven AI applications that would rule the post-2018 literature was laid by these early investigations (Karatay, 2024; Wei et al., 2023).

The empirical base expanded quickly starting in 2018, and the field entered a new age of generative model creation and AI-assisted customisation.

- **AWE and Writing Development:** Experimental research and meta-analyses have shown that AWE tools reduce writing and computer anxiety while also greatly enhancing L2 writing motivation and performance. They work best when used in conjunction with teacher comments rather than on their own (Wei et al., 2023; Karatay, 2024).
- **Chatbots for Interaction and Speaking:** Systematic studies of chatbots for interaction and speech (Du et al., 2024; Cislowska, 2024) consistently show excellent results for learner confidence, engagement, and speaking fluency. Task alignment, feedback style and conversational design quality are included as important mediating factors.
- **ASR Based Pronunciation Support:** ASR- driven speaking and pronunciation technologies offer real-time corrective feedback and these technologies reduce students' anxiety. These also enable quantifiable improvements in speaking fluency and pronunciation correctness (Du et al., 2024).
- **Teacher and Student Perceptions, Readiness, and Ethics:** According to the results of a study which was conducted by Nguyen and his friends (2025), long- term integration of AI in classes involves crucial policy creation and teacher preparation. In this study they looked into how teachers and students perceived the advantages, hazards, and ethical issues—such as prejudice, data privacy, and assessment integrity—of large language models (LLMs) like ChatGPT.

- **Comprehensive Systematic Reviews:** According to cross-decade syntheses (Zhu & Wang, 2023), AI in language education has primarily focused on speaking and writing, with AWE, chatbots, machine translation, and ASR being the most common technology. Future studies on ethics, teacher readiness, and low-resource language situations are also recommended by these reviews.

Since 2020, research on integrating AI into English language teaching (ELT) in Turkey has accelerated dramatically, mirroring both regional and worldwide trends. Turkish EFL instructors' views of AI have been investigated through qualitative and mixed-method studies (Boğaz, 2024), which have shown that they have positive attitudes toward innovation but ongoing worries about workload, data security, and academic integrity. AI-based chatbots can greatly enhance oral fluency and listening comprehension, according to quasi-experimental doctoral research (Koç, 2024), but teacher assistance and training are still crucial. According to research conducted in open and distance learning contexts (Taşkıran, 2022; Bulut, 2021), AWE tools improve writing achievement and motivation in online EFL courses by offering useful formative feedback. Scales measuring teachers' and pre-service teachers' attitudes about AI have been developed or modified for use in Turkish research (Eriçok, 2024; Özkan, 2024). These highlight ethical and pedagogical problems with an excessive reliance on technology, as well as statistically significant disparities across gender, experience, and branch. In Turkey, systematic reviews (Yılmaz, 2024, 2025) summarize the use of chatbots and other AI tools for learning foreign languages. To support evidence-based policy and practice, they suggest more rigorous experimental and longitudinal research, evaluation alignment, and more explicit task design frameworks.

2.2.4. Artificial Intelligence Tools in English Language Teaching

AI technologies have been progressively incorporated into a range of pedagogical applications in the area of English language education, improving the processes of instruction and learning. Common AI-driven tools include chatbots that mimic conversational partners for oral communication practice, speech recognition systems that help with pronunciation training, adaptive platforms that tailor vocabulary learning based on learner performance and pace, and automated writing evaluation (AWE) systems that give immediate feedback on students' writing performance (Li & Ni, 2021; Tegos & Demetriadis, 2020). Because these technologies help increasing student autonomy and participation by providing facility

students to advance necessary content that is appropriate to their levels and to receive quick and personalized feedback.

However, some studies have shown that there are some challenges about the use of AI in classes in spite of its' educational advantages. Teachers are generally anxious about the lack of confidence and inadequate training while they are using the AI tools successfully in their classes (Fitria, 2023). Besides, algorithmic prejudice, data privacy, and possible over-reliance on technology are worries which imply important moral and practical issues (Kessler, 2018). Teachers worry about weakening human communication of AI but human based and natural communication is very crucial in language learning. Therefore, the use of AI tools in classroom is mainly about the institutional support systems, teacher preparedness, and pedagogical design, and it is necessary to pay attention to these issues while using AI tools in language learning.

Studies which are about AI use in language teaching in Türkiye have shown increase especially with the effect of Covid-19 Global Pandemic which partially changed the education systems. Studies show that the teachers who teach English as a foreign language in Türkiye are aware of the potential of AI tools in learning outcomes, give real-time feedback, and encourage student autonomy (Aydın & Güngör, 2022; Yılmaz, 2023). According to Öztürk and Arslan (2021), intelligent tutoring systems, speech assessment platforms with AI help, and automated essay scoring systems are some types of applications which were adopted for not only K-12 but also higher education contexts. On the other hand, there is growing interest for using AI tools in school contexts in Türkiye but there is still insufficient. This insufficiency is because of instructors' low level of digital literacy, a lack of training opportunities, insufficient institutional support, and worries about data protection (Gül & Çelik, 2023). Teachers feel themselves as insufficient while using AI tools in education contexts because of needing for pedagogical guidance and necessary technological equipments, on the other hand they appreciate AI's capacity to decrease the workloads of teachers (Demir & Kaya, 2022). Besides, there are some difficulties in reaching necessary technological equipments and Internet connection in especially rural areas, so this situation makes difficult to adopt AI tools in language classes (Kılıç & Bayrak, 2021).

In general, the studies which are conducted in Türkiye discuss the needs for national programmes which back up the use of AI in classes in ethical and pedagogical ways and also the needs for continous professional development programmes which develop the AI literacy of teachers. The results show that the strong institutional and political backups are needs for growing AI's educational potential in the Turkish ELT context.

The literature analysis indicates that while incorporating artificial intelligence tools into English language instruction has many pedagogical benefits, there are also substantial obstacles that must be carefully considered before being implemented. Through adaptive systems and real-time interactivity, international studies continuously demonstrate how AI technologies may support personalized learning, improve the quality of feedback, and increase learners' motivation and engagement (Li & Ni, 2021; Tegos & Demetriadis, 2020). New coming Turkish studies show that teachers are aware of how AI can change the language teaching methods and how AI can provide a meaningful change by providing more individualized, effective and data- driven training. (Aydın & Güngör, 2022; Yılmaz, 2023). On the other hand, there are some recurrent problems which are seen in both national and international contexts. The absence of institutional infrastructure which enables AI based education, inadequate digital competencies of teachers and teacher preparation are the most seen impediment about AI integration to the classes (Fitria, 2023; Gül & Çelik, 2023).

Recent studies show that some ethical problems like algorithmic transparency, data security, and the possibility of reducing human engagement are seen as important issues about AI in education (Kessler, 2018). The absence of professional development courses for AI literacy and the inadequate technology sources are accepted as exasperating issues in Türkiye (Demir & Kaya, 2022; Kılıç & Bayrak, 2021).

The structure of this study mainly depends on the idea which backs up that despite AI has a potential to enhance English language education, there is a lack of some necessary issues like consistent teacher preparation, moral leadership, and institutional frameworks. It can be said that for future research, mixed methods and longitudinal studies are necessary to evaluate the long-term effects of AI tools on pedagogy, learner autonomy, and educational access.

2.2.5. Teachers' Perceptions and Attitudes Toward AI Integration

In recent years, Artificial Intelligence has changed the education especially how educators plan, present, and assess educational experiences in a revolutionary way. According to Zawacki-Richter and his friends (2019), teachers' perceptions and attitudes are accepted as important issues for the extent and efficacy of incorporating AI in the classroom. The studies which were conducted in different education areas show that most of educators have favorable thoughts about AI's potential of improving evaluation, efficiency, and personalization, on the other hand they have worries about the ethical, pedagogical, and

emotional ramifications of this technology (Holmes et al., 2019; Li et al., 2022). The degree and effectiveness of integrating AI in the classroom are greatly influenced by the attitudes and views of the teachers (Zawacki-Richter et al., 2019). Studies conducted in a variety of educational contexts show that although most educators agree that AI has the potential to improve evaluation, efficiency, and personalization, they also have concerns about the ethical, pedagogical, and emotional ramifications of this technology (Holmes et al., 2019; Li et al., 2022).

The Unified Theory of Acceptance and Use of Technology (UTAUT) and the Technology Acceptance Model (TAM) are two theoretical models which are used to analyze the teachers' acceptance of AI. According to Lin et al. (2021), the intention of using AI tools in the classroom of the teachers is strongly related with perceived utility and simplicity of use. Similarly, according to Zhang and Lin (2024), the thoughts about AI of teachers are affected not only technological familiarity but also self-efficacy and institutional culture. When the educators see the AI as a helper for educational context rather than a replacement, the positive perceptions bring out (Luckin & Çukurova, 2019).

Teachers are generally keen on AI- powered technologies which ease automated feedback and adaptive learning in language learning environment. According to Kessler (2023), AI powered technologies improve the student autonomy and formative evaluation in English Language Teaching but there are some concerns about the extremely dependency on technology and the loss of human communication. According to Liu and Wang (2023), the balance between pedagogical facilities and technological worries significantly affect the readiness of the teachers for AI integration. Furthermore, it is seen that not only political backups, but also professional development are required to encourage teachers for AI use (Chen et al., 2024).

According to cross-cultural study, teachers' perspectives vary significantly based on local infrastructures, policy frameworks, and cultural attitudes regarding technology. While hierarchical structures and exam-oriented systems in East Asian contexts slow down instructors' willingness to experiment with AI, Alenezi (2023) shown that Saudi Arabia's adoption of AI is hampered by a lack of institutional training and uneven policy support (Li et al., 2022). Overall, the research from around the world shows that there is a consensus regarding the pedagogical benefits of AI, but it also emphasizes the continued necessity of teacher-centered approaches to ethical awareness and professional learning.

Although they are still in their early phases, research on teachers' attitudes and perspectives of AI integration in Turkey has been expanding quickly since 2020. There is

both hope and doubt about AI's role in education, according to research done in several places, especially among K–12 English language teachers (Yılmaz & Kara, 2024; Çelik & Korkmaz, 2023).

Turkish teachers generally see AI as a way to increase student engagement, personalized feedback, and classroom efficiency, but they also point out significant obstacles like a lack of technical training, poor infrastructure, and little institutional guidance, according to Yılmaz and Kara (2024). Similarly, according to Çelik and Korkmaz (2023), most educators are open to incorporating AI tools into their lessons, but they lack localized resources that are in line with the national curriculum and defined pedagogical paradigms.

Demir and Şahin (2022) investigated pre-service teachers' opinions regarding AI-based learning systems in higher education settings and came to the conclusion that acceptance is largely influenced by perceived utility and ethical issues. The study also showed that formal AI literacy components are rarely included in teacher education programs in Turkey, which leaves aspiring teachers ill-prepared for contexts with a lot of AI.

Building teachers' AI competencies has been highlighted in recent national policy talks, such as the Ministry of National Education's "Digital Transformation and AI in Education" framework (MoNE, 2023). But according to actual data, implementation is still inconsistent among provinces and educational levels (Aydın & Polat, 2024).

According to the literature in Turkey, teachers' opinions on AI are generally cautiously optimistic. While they accept that AI has the potential to improve student enthusiasm and teaching efficacy, they also voice concerns about workload, equity, and ethical responsibility. Scholars like Yılmaz and Kara (2024) and Aydın and Polat (2024) emphasize that ongoing professional development, institutional investment, and culturally sensitive AI pedagogies will be crucial for the successful integration of AI in Turkish schools.

2.2.6. Challenges and Barriers to AI Integration in Language Education

In a number of articles including Garzón (2025) and the British Council (2023), most recently systematic reviews have shown teacher related obstacles are some of the largest barriers to AI integration, such as teacher's digital literacy is low, teachers are reluctant to change, and ethical concerns about AI. In addition, many teachers have uncertainty regarding the reliability and job security of AI, as well as their role/responsibilities in an AI supported classroom. Without adequate professional development and institutional support, it is difficult

for teachers to embrace AI supported strategies due to the uncertainties and fears they have about it.

Institutional barriers also include data privacy, algorithmic bias and opaque ethical governance. These issues are not only technical and legal issues but also stemming from pedagogical concerns as they affect students' and educators' confidence in AI powered tools (Garzón, 2025). A theme that is continually referred to in the literature is the need for transparent policies and clearly defined ethical frameworks for all schools related to AI.

Numerous studies show that the lack of current learning management systems (LMS) that are compatible with AI technology are hindered by infrastructure limitations, technology issues, and incompatibilities to AI. Many of the infrastructure limitations are seen primarily at the K-12 level where several schools have unreliable Internet access or outdated technology causing barriers to using AI in the classroom (British Council, 2023). In addition, there has also been an increase in AI related cheating, plagiarism and unfair evaluations, all of which contribute to teacher and student confusion as institutions develop policies surrounding AI generated content. One of the most frequently mentioned challenges caused by AI generated content is that there are no consistent assessment practices currently in use (Associated Press, 2025). AI tools may have a result of decreasing teacher-student and teacher-parent communication in classrooms by promoting excessive standardisation that does not align with pedagogical objectives. Research suggests that AI applications may stifle creativity and critical thinking and answer during periods when proper pedagogical integration is absent (Garzón, 2025). An additional issue has often been referred to as the digital divide. Educators and learners from economically marginalised backgrounds frequently face obstacles to equitable participation in AI-mediated education such as access, languages, and the lack of digital proficiency (Garzón, 2025). Concerns over the potential for linguistic bias in AI systems have been highlighted in recent publications focused on English language teaching situations. The concerns are based on using certain models that have "standard English" expectations of speakers from other language backgrounds (British Council, 2023).

Data collected in 2025 indicated that the most common barriers identified by English teachers to AI integration were a lack of clear pedagogical alignment, lack of compatibility with school technology, and ethical issues (Benek, 2025). Overall, research from around the world shows that there are numerous challenges, including institutional, technical, ethical, and human factors, that are hindering the successful integration of AI into language teaching. The data supports the premise that without ethical governance, teacher empowerment, and

balanced pedagogical design, the full potential of AI in the classroom cannot be realised (Garzón, 2025; British Council, 2023; Associated Press, 2025).

Teachers have expressed a strong need for training in AI literacy and institutional ethical guidelines thus to help them ethically utilise AIs in their teaching; based on a qualitative study conducted in a preparatory school at a Turkish university, teachers identified ethical uncertainty as the most significant barrier to AI integration (Boğaz, 2024). While educators preparing to teach English in Turkish universities believe that AI tools will save them time and enhance the customised learning experience of their students, they are also concerned about possible job loss due to AI, privacy violations concerning their personal data, and students' diminishing capacity for critical thinking. A mixed methods study conducted by Derinalp (2025) with 193 pre-service English teachers found that, overall, there were various opinions among participants about AI use. Main barriers included tool reliability, ethical restrictions and ambiguity in policy regarding AI use.

Akyıldız (2024) indicated that EFL teachers in Turkey understood that AI could enhance creativity, however, they were concerned that AI overuse would result in the production of less original and increasingly standardised language by students. Therefore, the extent to which AI can influence the development of language production by students is dependent on the pedagogical design used in its implementation. Research studies demonstrate that many barriers to AI integration exist within institutions, pedagogy, sociology, technology and humans. When implementing AI into the language instruction, successful implementation needs the creation of as inclusive as possible designs along with a comprehensive ethical governance structure in addition to the development of teacher training programs. The establishment of institutional ethical codes, in-service training opportunities and the establishment of infrastructure support are some of the required needs within the Turkish educational committees. Further long-term studies are needed to examine how teachers' ability to prepare and ethically utilise AI within their classroom increase as AI becomes seamlessly integrated into teacher curriculum.

CHAPTER III

3. METHODOLOGY

The current chapter describes the research questions, research design, participants, data collection instruments, and methodology, including data analysis methodology, in order to look into how ELT instructors view and use AI tools in the classroom.

3.1. Research Questions

The purpose of the present investigation is to assess the attitude, feeling, and confidence of English Language instructors in using AI for language education. To fulfill this goal, the research is intended to identify the advantages of using AI in language learning and the barriers/inhibitors to the incorporation of AI into the language learning process as well as the relationship between teacher demographics and their perception of the technologies. The research will exploit both Primary Research Questions (PRQ) and Secondary Research Questions (SRQ) as the fundament for the study:

3.1.1. Primary Research Questions (RQs)

RQ1: What are English language teachers' perceptions of the benefits and challenges of integrating AI tools into language classrooms?

RQ2: How do English language teachers' attitudes and readiness levels influence the integration of AI tools in their teaching practices?

3.1.2. Secondary Research Questions (SRQs)

SRQ1: Are there significant differences in teachers' perceptions of AI integration based on demographic variables such as gender, age, teaching experience, and educational level?

SRQ2: What are the most commonly perceived barriers that hinder the effective integration of AI tools in English language teaching?

The aim of struggling to answer these questions is to set forth comprehensively how the English teachers see and use AI tools in their classes and studies. The study aims to show that the teachers are ready to pedagogical changes which come with AI. Besides, to look at

the demographical differences ease to decide the population who need help more to apply AI successfully in education setting.

3.2. Research Design

This study used an explanatory sequential mixed- methods research design which consists of not only quantitative but also qualitative methods to deeply understand the attitudes, beliefs and readiness of K- 12 English teachers about the use of AI tools in language classes. Mixed- methods design is important for studies like this study because it presents deeper qualitative insights with the broader quantitative perspective (Creswell & Plano, 2018). In this study, to be able to provide more detailed and explanatory results the quantitative and the qualitative analysis were conducted for sequential approach.

In this study these sequential steps were followed:

- Designing and administering the quantitative questionnaire
- Statistical analysis of survey data by using SPSS
- Selecting participants for the qualitative phase
- Conducting semi- structured interviews
- Coding and thematic analysis using NVivo
- Integrating quantitative and qualitative findings for interpretation.

3.3. Research Setting and Participants

The study was conducted in four different cities: Amasya, Çorum, Samsun and Tokat. These cities are named as Central Black Sea Region provinces. In this study these cities were chosen because they have significant number of K-12 schools and because of their positions they are easily reachable for the author.

For this study the research allowances were taken from the MoNE for all K-12 schools in these cities before started to research. After that the questionnaires were sent via WhatsApp to teachers' colleagues' group and some of them were delivered by hand to the teachers. 306 participants were accepted to be volunteers for this study and they answered the questionnaire.

For the qualitative phase, a purposive maximum variation sampling strategy was employed. Fifteen participants were intentionally selected based on their teaching experience, school type, and demographic characteristics to represent diverse backgrounds and perspectives. This approach enabled the researcher to obtain rich, in-depth data and to further

explain the quantitative results.

3.4. Demographic Characteristics of the Participants

The questionnaire of the study was applied to 306 participants who are from different cities of the Central Black Sea Region (Amasya, Çorum, Samsun, Tokat). The participants were from different levels of K-12 schools. In this part main demographic characteristics of the participants were given to be able to show the analysis correctly.

3.4.1. The Gender of the Participants

This part shows the frequencies of the participants according to the gender. In this study there were 183 female and 123 male participants.

Table 1. The Gender Frequencies of the Participants

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	183	59,8	59,8	59,8
	Male	123	40,2	40,2	100,0
	Total	306	100,0	100,0	

According to the Table 1 the valid percent of the female participants is 59,8 % and the valid percent of the male participants is 42,8 %. This percentage shows that the female participants of the study were more than the male participants. On the other hand the percentage says that the male participants are represented in the study, too.

3.4.2. The Age Groups of the Participants

In this study the age groups of the participants have been chosen as 20-29, 30-39, 40-49 and 50+. These groups have been used to not only see the ages of the participants but also to be able to understand the different viewpoints of the different age groups.

Table 2. The Age Groups of the Participants

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20-29	84	27,5	27,5	27,5
	30-39	141	46,1	46,1	73,5

40-49	60	19,6	19,6	93,1
50+	21	6,9	6,9	100,0
Total	306	100,0	100,0	

Table 2 shows that the percentages of the different age groups of the participants and according to this table 30-39 age group is mostly seen group with 46.1%, on the other hand there are few 50+ participants with 6.9 %. If we look at the other two groups, we see that 20-29 age groups are a bit more than 40-49 age groups. There are 84 participants who are from 20-29 age group and 60 participants from 40-49 age group. According to this table it can be said that this study has homogeneity about the age groups of the participants. On the other hand, the most seen group is nearly half of the whole.

3.4.3. Teaching Experiences of the Participants in Years

In this section the experience years of the participants have been shown. There are four groups for different experiences. These are less than 1 years, 1-5 years, 6-10 years and 10+ years. The frequencies and percentages of the numbers of the experiences have been shown in the table below

Table 3. The Experiences of the Participants in Years

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 1 year	24	7,8	7,8	7,8
	1-5 years	72	23,5	23,5	31,4
	6-10 years	45	14,7	14,7	46,1
	More than 10 years	165	53,9	53,9	100,0
	Total	306	100,0	100,0	

According to the Table 3 the fourth group (more than 10 years) is more than half, on the other than less than 1 year group is the smallest group if we look at the whole. The other two groups have nearly half of the whole with the 48.2 percentage. The fewer of them is 6-10 years with the 14.7 percentage. The 1-5 years group is in the second line with the 23.5 percentage.

This data is compatible with the age group section. The weighted mean of these two groups is acceptable. For example, if we accept that the age at entry into the profession as

twenty- two, the 30-39 groups are mostly in the group of more than years experience. So, it can be said that these two characteristics of the participants are coherent.

3.4.4. Educational Level of the Participants

As a last characteristic, the educational level of the participants has been asked to the participants. There have been four different options; Bachelor's degree, Master's Degree, Doctorate and Other.

Table 4. Educational Level of the Participants

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Bachelor's Degree	231	75,5	75,5	75,5
	Master's Degree	63	20,6	20,6	96,1
	Doctorate	3	1,0	1,0	97,1
	Other	9	2,9	2,9	100,0
	Total	306	100,0	100,0	

According to the Table 4, the Bachelor's Degree is the most with 75.5 %. The Master's Degree is also the second with 20.6%. It can be said that this percentage provides variety in the study. There are 3 participants who have got doctorate degree, and it can be accepted as a normal because there are not lots of teachers who have doctorate degrees in public schools of MoNE. For the "Other" section it can be said that some of 9 participants have answered this question falsely (they may have chosen Bachelor's degree), and some of them may be from postdoctoral degree so they have chosen this section. In spite of every situation, it can be acceptable that the educational level of the participants of this study is distributed homogeneity.

3.5. Data Collection Instruments

A structured questionnaire and semi-structured interviews are the two complementing data collection tools used in this study to gather thorough information addressing the research issues. Both quantitative and qualitative insights into the attitudes, views, and preparedness of English language teachers toward the use of Artificial Intelligence (AI) tools in the classroom are made possible by this mixed-methods approach.

Data were collected through two complementary instruments: a structured

questionnaire and semi-structured interviews. In the first phase, the questionnaire was administered to English language teachers to obtain quantitative data regarding their attitudes, perceptions, and readiness toward AI integration. The survey was distributed online, and the responses were analyzed statistically using SPSS. In the second phase, semi-structured interviews were conducted with purposefully selected participants to gain deeper insights and to further explain the quantitative results. All interviews were recorded, transcribed, and analyzed thematically using NVivo. This sequential process ensured both breadth and depth in addressing the research questions.

3.5.1. Questionnaire

The quantitative data were obtained using a structured questionnaire based on previous studies investigating the use of Artificial Intelligence (AI) in Education (Kessler, 2018; Li and Ni, 2021; Fitria, 2023) developed by Kalra (2024). Permission was granted by Kalra to utilize the questionnaire.

The overall reliability of the questionnaire is high with a Cronbach's α of 0.907 (greater than 0.9). According to Psychometric Theory, reliability coefficients above .70 indicate acceptable internal consistency, while values above .90 represent excellent reliability. Furthermore, all dimensions of the questionnaire demonstrated reliability coefficients of greater than 0.7 indicating adequate internal consistency. The Kaiser-Meyer-Olkin (KMO) score was computed to be 0.879, and the Bartlett test of sphericity for χ^2 was significant at $p < 0.01$, suggesting that common factors exist across question matrices and thus providing evidence of construct validity for the questionnaire (Kalra, 2024).

The questionnaire includes four main elements:

1. Demographic Information – Gender, Age, Number of Years Teaching, Level of Education, and Type of School

2. Perceived Benefits of AI in Language Teaching – 20 items that assess teacher expectations regarding how the use of AI tools improves their effectiveness as a teacher, their ability to provide feedback and connect with learners.

3. Barriers & Challenges – 15 items that assess barriers and challenges to the use of AI in education as they relate to infrastructure, technology, and ethical issues associated with its use.

4. Attitudes & Readiness – 10 items that assess teacher willingness, self-efficacy and perceived preparedness to implement AI tools in the classroom.

All items in the main sections were rated on a five-point Likert-type scale (1 = Strongly Disagree, 5 = Strongly Agree) and a pilot test of the questionnaire was administered to 20 teachers to evaluate clarity, reliability and internal consistency, and revisions to the questionnaire were completed prior to main data collection.

3.5.2. Semi-Structured Interviews

Semi-structured interviews were conducted with 15 participants selected through purposive maximum variation sampling. Participants were chosen based on their teaching experience, school type, gender, and educational background to ensure diverse perspectives. The interviews were conducted online/face-to-face, each lasting approximately 20–30 minutes. All interviews were audio-recorded with participants' consent, transcribed verbatim, and analyzed using thematic analysis in MAXQDA to identify recurring themes and patterns.

This qualitative component provides further triangulation of the quantitative data and an enhanced understanding of the findings through providing additional insight into the perceived underlying reasons for teachers' perceptions and training levels.

The questions to be used in the interviews were created by the researcher in collaboration with ChatGPT, and the researcher sought input from three different experts in their respective fields.

3.6. Data Analysis Procedure

Both quantitative and qualitative methods were employed in a mixed-methods study looking at data from a survey/questionnaire completed by English language instructors to provide an understanding of their views of the integration of AI into their teaching practices and interactions with students. The quantitative data collected from participants responding to the survey through the use of the Statistical Package for the Social Sciences (SPSS version 26) was analyzed. Descriptive statistics were used to summarize the participants' demographic characteristics, and responses to each question, including means, standard deviations, and frequencies. Inferential statistics such as independent t-tests and one-way ANOVA tests were then utilized to determine any statistically significant differences in regard to the teachers' perceptions based on their demographic backgrounds; gender, age, teaching experience, and educational level. Reliability of the measure was assessed with Cronbach's alpha coefficient and the internal consistency of the measure items within each construct determined.

The qualitative information collected through semi-structured interviews with instructors was analyzed using theme analysis with the use of NVivo 15 software. Once the transcripts from the interviews were inductively coded to identify persistent themes, patterns, and sub-themes related to the instructors' perceptions, benefits, challenges, and preparedness for implementing AI in their language instruction, validity and reliability were established through expert review and triangulation with quantitative results. The analysis and interpretation of both quantitative and qualitative data were integrated to develop a more holistic and nuanced understanding of the research questions.



CHAPTER IV

4. FINDINGS

In this section the findings which based on the participants' answers to the questionnaire were shown. The questionnaire had three different sections as Section A (Perceived Benefits of AI), Section B (Perceived Challenges) and Section C (Teacher Attitudes and Readiness) and in this part these sections have been evaluated on by one.

4.1. Cronbach Alpha Analysis of the Questionnaire

The 5 - point Likert Scale type questionnaire has been used for this study as a material. This questionnaire was developed by Rusma Kalra (2024). Kalra says "The overall reliability of the questionnaire is high with a Cronbach's α of 0.907 (greater than 0.9). Furthermore, all dimensions of the questionnaire demonstrated reliability coefficients of greater than 0.7 indicating adequate internal consistency. The Kaiser-Meyer-Olkin (KMO) score was computed to be 0.879, and the Bartlett test of sphericity for χ^2 was significant at $p < 0.01$, suggesting that common factors exist across question matrices and thus providing evidence of construct validity for the questionnaire". To be able to be sure that the questionnaire is suitable for this study, the Cronbach Alpha Analysis has been done.

4.2.1. Cronbach's Alpha Analysis of Perceived Benefits of AI in English Language Learning Scale (Section A)

In the questionnaire there are 3 different sections which are about different subjects. Section A is looking at the perceived benefits of AI in ELT with 20 different sentences. The table below shows the Cronbach's Alpha result of section A.

Table 5. Cronbach's Alpha Analysis of Section A

Cronbach's Alpha	N of Items
,946	20

According to the table, Cronbach's Alpha has been found as 0,946. Reliability coefficients above .70 are generally considered acceptable, while values above .90 represent excellent reliability (Psychometric Theory). Therefore, Section A can be regarded as highly reliable. and this shows that the section A is indicating excellent internal consistency.

4.2.2. Cronbach's Alpha Analysis of Perceived Barriers and Challenges of AI Integration Scale (Section B)

Section B is about perceived barriers and challenges of AI integration. This part has 15 items and the result of Cronbach's Alpha analysis has been given in the table below.

Table 6. Cronbach's Alpha Analysis of Section B

Cronbach's Alpha	N of Items
,944	15

According to the table the result of Cronbach's Alpha Analysis is 0,944 and this says us that the Section B has excellent internal consistency, too.

4.2.3. Cronbach's Alpha Analysis of Teacher Attitudes and Readiness toward AI in Language Classrooms Scale (Section C)

Section C has 10 items which are about the perceived barriers and challenges of AI integration.

Table 7. Cronbach's Alpha Analysis of Section C

Cronbach's Alpha	N of Items
,896	10

According to the table the Cronbach's Alpha result of section C is 0,896. This shows that Section C has high internal consistency like the other two sections.

As a result, the questionnaire has different sections which measure different issues, so calculating the Cronbach's Alpha one by one is seemed more meaningful than calculating a single overall Alpha.

4.3. T- Test Analysis for All Sections

In this analysis, each variable has been analyzed for each section one by one and the aim of this analysis is to examine the predictive effect of the independent variable on the dependent variable.

4.3.1. Gender Variable for Section A (Independent Samples T- Test)

To be able to reach meaningful findings, gender variable has been analyzed by using T- Test. The results have been shown in the tables below.

Table 8. Group Statistics of Gender-Section A

	Gender	N	Mean	Std. Deviation	Std. Error Mean
SectionA_mean	Female	183	3,6197	,77024	,05694
	Male	123	3,5232	,80290	,07239

According to the table, the mean scores of Section A of female participants ($M = 3.62$, $SD = 0.77$) are a bit higher than the mean scores of Section A of male participants ($M = 3.52$, $SD = 0.80$). But this difference cannot be accepted as a meaningful ($t(304) = 1.056$, $p = .292$).

Table 9. Independent Samples Test of Gender-Section A

		t	df	One- Side p	Two-Side p
SectionA_mean	Assumed	1,056	304	,146	,292
	N. Assumed	1,048	254,368	,148	,296

According to the table 9, there is no statistically meaningful difference between the results of female and male participants ($t(304) = 1.056$, $p = .292$). This tells us that perceived benefits of AI do not change according to the gender.

4.3.2. Gender Variable for Section B (Independent Samples T- Test)

In this part T- test for section B and gender has been studied. The findings can be seen below.

Table 10. Group Statistics of Gender- Section B

	Gender	N	Mean	Std. Deviation	Std. Error Mean
SectionB_mean	Female	183	3,3738	,91462	,06761
	Male	123	3,5350	,76315	,06881

According to Table 10, the mean scores of Section B of male participants ($M = 3.54$, $SD = 0.76$) are higher than the mean scores of Section B of female participants ($M = 3.37$, $SD = 0.91$).

Table 11. Independent Samples Test of Gender- Section B

		t	df	Two-Side p	95% Confidence
SectionB_mean	Assumed	-1,613	304	,054	-,16119
	N. Assumed	-1,671	290,053	,048	-,16119

According to Table 11, there is no significant difference between Section B mean scores of female and male participants. Although male participants are higher than the mean scores of Section B, the 95% confidence interval of the mean difference included zero $[-0.36, 0.04]$, indicating that the observed difference was not statistically reliable.

4.3.3. Gender Variable for Section C (Independent Sample T- Test)

This part consists of analysis of gender variable on section C. The findings were given in two tables below.

Table 12. Group Statistics of Gender- Section C

	Gender	N	Mean	Std. Deviation	Std. Error Mean
SectionC_mean	Female	183	3,6477	,71852	,05311
	Male	123	3,6171	,74611	,06727

According to Table 12, the female participants' mean scores of Section C ($M = 3.65$, $SD = 0.72$) are a bit higher than the male participants ($M = 3.62$, $SD = 0.75$). On the other hand, this difference is very small and descriptive in nature, and its statistical significance should be examined using an independent samples t-test.

Table 13. Independent Samples Test of Gender- Section C

		t	df	Two-Side p	95% Confidence
SectionC_mean	Assumed	,360	304	,719	-,13677
	N. Assumed	,358	255,065	,721	-,13815

According to Table 13 there is no statistically meaningful difference in Section C mean scores of females and males ($t(304) = 0.36$, $p = .719$).

The mean difference between groups was very small ($M_{diff} = 0.03$), and the 95% confidence interval included zero $[-0.14, 0.20]$, indicating that the observed difference was not statistically reliable.

According to the results of gender – sections analysis, readiness levels measured in Section C are not influenced by gender.

4.4. One- Way ANOVA for All Sections

In this part, One -Way ANOVA has been used for understanding the differences of means of sections.

4.4.1. One- Way ANOVA for Age Groups- Section A

The One- Way ANOVA has been used to explore whether the Section A points of different age groups differ from each other or not. The findings can be seen at the table below.

Table 14. One- Way ANOVA for Age Groups- Section A

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	22,930	3	7,643	14,043	<,001
Within Groups	164,375	302	,544		
Total	187,306	305			

According to Table 14 there is statistically meaningful difference in Section A mean scores across age groups ($F(3, 302) = 14.04$, $p < .001$).

4.4.2. One- Way ANOVA for Age Groups- Section B

Whether age groups are meaningful variable on Section B or not is a question for this

analysis. The findings were given as a table below.

Table 15. One- Way ANOVA for Age Groups- Section B

SectionB_mean	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4,179	3	1,393	1,903	,129
Within Groups	221,032	302	,732		
Total	225,212	305			

According to Table 15 there is no meaningful difference between different age groups' answers. The finding ($F(3, 302) = 1.90, p = .129$) says that age doesn't play a meaningful role in Section B.

4.4.3. One- Way ANOVA for Age Groups – Section C

As a last part the Section C has been studied about the effect of age groups. The findings were given with a table below.

Table 16. One- Way ANOVA for Age Groups- Section C

SectionC_mean	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	10,615	3	3,538	7,061	<,001
Within Groups	151,328	302	,501		
Total	161,944	305			

Table 16 shows that there is a statistically meaningful difference between the different age groups' mean scores on Section C ($F(3, 302) = 7.06, p < .001$). The effect size was small to moderate ($\eta^2 \approx .07$), indicating that age explains approximately 6–7% of the variance in Section C scores.

If we look at the whole picture about age groups' effect on the sections, we can see the table below.

Table 17. The Comments for Age Groups- All Sections

Section	ANOVA	The Effect Size	Comment
Section A	Meaningful ($p < .001$)	Medium- High ($\eta^2 \approx .12$)	Age is a determining factor.
Section B	Meaningless ($p = .129$)	Very Little ($\eta^2 \approx .02$)	Age is not effecting.
Section C	Meaningful ($p < .001$)	Little- Medium ($\eta^2 \approx .07$)	Age is partially effective.

According to this table the participants' age groups are meaningful for Section A and Section C.

4.5. The Age Groups- Teaching Experience Multiple Regression Analysis Results

In this part the age groups and teaching experience (in years) variables have been studied together for all sections. The results were given with different titles.

4.5.1. The Age Groups- Teaching Experience- Section A

The findings of this part have been shown with the table below.

Table 18. ANOVA Results of Age Groups- Teaching Experience- Section A

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	10,692	2	5,346	9,172	<,001 ^b
Residual	176,614	303	,583		
Total	187,306	305			

Table 19. Coefficients of Section A

		Coefficients ^a		Standardized		
		Unstandardized		Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	3,043	,141		21,520	<,001
	Age Range	-,063	,069	-,069	-,915	,361

Teaching Experience (in years)	,212	,057	,280	3,708	<,001
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a. Dependent Variable: SectionA_mean

4.3. Multiple Regression Analysis Results

To define which variable is very concrete on the sections separately, multiple regression analysis has been done. Each section has been analyzed one by one. The results have been given under the different titles below.

4.3.1. Section A Multiple Regression Analysis Results

Section A is about the perceived benefits of AI in English Language Learning. In this part Section A analyzed with all variables (age, gender, teaching experience, educational level). There are 4 different titles under the multiple regression analysis but for this part only “coefficients” table has been taken as a table below.

Table 20. Section A Multiple Regression Analysis

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	2,962	,214		13,838	<,001
Gender	-,083	,091	-,052	-,920	,358
Age Range	-,063	,069	-,069	-,915	,361
Experience	,221	,058	,291	3,803	<,001
Education	,130	,069	,106	1,872	,062

a. Dependent Variable: SectionA_mean

According to the table gender ($B = -0,083$, $\beta = -0,052$, $p = .358$) and the age range ($B = -0,063$, $\beta = -0,069$, $p = .361$) variables have not a meaningful effect on Section A. On the other hand, teaching experience is the most meaningful variable ($B = 0,221$, $\beta = 0,291$, $t = 3,803$, $p < .001$). Besides, educational level ($B = 0,130$, $\beta = 0,106$, $p = .062$) has little effect on section A.

According to these results it can be said that the raising teaching experience in years means the better thoughts about the benefits of AI in English Language Learning. Educational level has limited effect on Section A. The other variables (gender, age) have no

effect on Section A.

4.3.2. Section B Multiple Regression Analysis

Section B is about perceived barriers and challenges of AI integration. In this part all variables (gender, age, teaching experience, and educational level) have been analyzed as multiple regression analysis and only coefficients table has been commented below.

Table 21. Section B Multiple Regression Analysis

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Model		B	Std. Error	Beta		
1	(Constant)	3,459	,241		14,347	<,001
	Gender	,161	,102	,092	1,574	,117
	Age Range	-,067	,078	-,067	-,865	,388
	Experience	-,033	,065	-,040	-,504	,615
	Education	-,003	,078	-,002	-,032	,974
a. Dependent Variable: SectionB_mean						

According to the table gender ($B = 0,161$, $\beta = 0,092$, $p = .117$) has no meaningful effect on Section B. Age range ($B = -0,067$, $\beta = -0,067$, $p = .388$) has no effect on Section B. Teaching experience in years ($B = -0,033$, $\beta = -0,040$, $p = .615$) has no meaningful effect on Section B. Lastly like other variables educational level's effect size ($B = -0,003$, $\beta = -0,002$, $p = .974$) nearly zero so it is also neutral about section B.

According to these results perceptions measured in Section B are largely independent of demographic characteristics.

4.3.3. Section C Multiple Regression Analysis

Section C is about teacher attitudes and readiness toward AI in language classrooms. In this part the multiple regression analysis of Section C has been done, and coefficients table has been added to comment on the effects of the variables on Section C.

Table 22. Section C Multiple Regression Analysis

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3,630	,206		17,617	<,001
	Gender	-,019	,087	-,013	-,215	,830
	Age Range	-,038	,066	-,045	-,579	,563
	Experience	,041	,056	,058	,728	,467
	Education	-,013	,067	-,012	-,197	,844

a. Dependent Variable: SectionC_mean

According to the table the gender variable ($B = -0,019$, $\beta = -0,013$, $p = .830$) has no statistically meaningful effect on Section C. Similarly, the age group variable ($B = -0,038$, $\beta = -0,045$, $p = .563$) has no meaningful effect on Section C. Like the others, teaching experience in years variable ($B = 0,041$, $\beta = 0,058$, $p = .467$) is not a meaningful predictor. Lastly, the educational level variable ($B = -0,013$, $\beta = -0,012$, $p = .844$) has minute amount effect and it is not a meaningful as statistically.

According to these results it can be said that any of the demographic variables can meaningfully predict mean scores of Section C. There is no demographic variable which effects Section C.

4.2. Qualitative Analysis of Interview Questions

In order to be able to understand the perceptions, opinions and experiences of the teachers about AI tools into English language teaching, the qualitative research method was used in this study. The quantitative analysis was not enough to be able to explain the teachers' experiences which are deep and complex, so there was a need to use qualitative analysis, too. This method helped delving deeply into the meanings, trends, and contextual elements which influence teachers' attitudes, behaviors and perceived difficulties while integrating AI into classroom.

Semi- structured interviews which allow participants to express their opinions were used by guaranteeing agreement with the study's goals. To be able to provide correct answers of the participants, every interview was fully transcribed. Then the transcriptions were organized for thematic analysis. This procedure included familiarization with the data,

preliminary coding, topic creation, and refinement in order to guarantee coherence and conceptual clarity.

In this study not only deductive but also inductive data coding were used. The deductive coding was directed by the research questions and the theoretical frameworks for AI integration and language instruction, on the other hand with the help of inductive coding, themes were arised immediately from participant narratives. Participant replies represented recurrent trends like perceived benefits, pedagogical problems, institutional constraints, and professional preparation and these categories and themes had different codes.

Some techniques like data triangulation, rich and thick description, and direct participant quotations were used to increase the reliability of the qualitative findings. These quotes were used to highlight important ideas, and they also offered variable proof for the intepretations. The coding procedure was examined again to reduce researcher bias and guarantee consistency throughout the dataset.

All things considered, the qualitative research offered important new perspectives on how English language instructors view and use AI in their teaching methods. The study's methodological rigor and explanatory power are strengthened by these findings, which supplement the quantitative results and add to a thorough grasp of the research subject.

4.2.1. Demographic Characteristics of the Participants

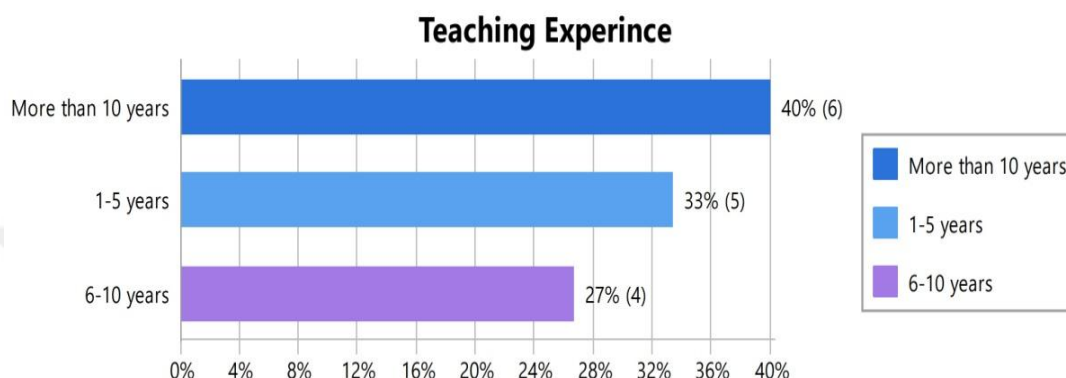
Fifteen English language instructors participated in the study's qualitative phase. A summary of their demographics is provided to give context for interpreting the results. In terms of gender, teaching experience, and educational background, the participation group showed a balanced distribution, which added to the study's richness and diversity of viewpoints.

Figure 1. Genders of the Participants



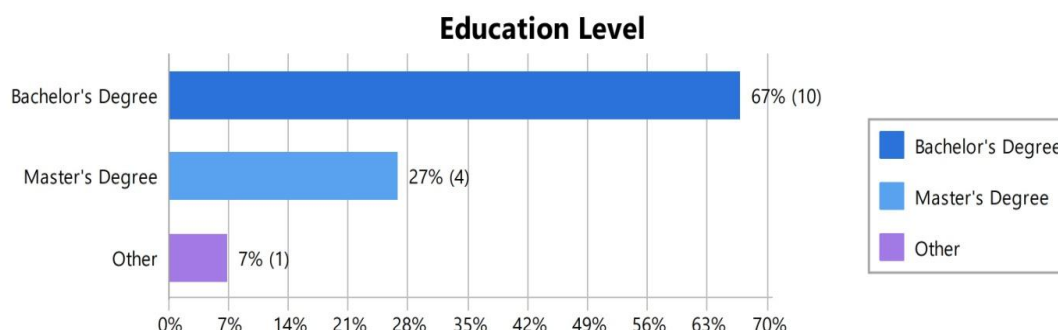
Gender representation was fairly equal, with eight individuals being female and seven being male. This distribution reduced the possibility of gender bias in the qualitative interpretations and enabled the study to include perspectives from both male and female teachers.

Figure 2. Teaching Experiences of the Participants



The participants' professional backgrounds varied with regard to their teaching expertise. The viewpoints of highly experienced practitioners were reflected in six teachers who had over ten years of teaching experience. On the other hand, four participants had six to ten years of experience, representing mid-career professionals, while five participants had between one and five years of experience, representing early-career teachers. This range made it possible to investigate how professional seniority can affect attitudes, preparedness, and perceptions about the use of AI tools in language instruction.

Figure 3. Education Level of the Participants



In terms of educational background, four participants had a master's degree, while the bulk of participants (ten teachers) had a bachelor's degree. An alternate educational background was indicated by one individual. This difference in educational backgrounds

offered insight into how advanced academic expertise and formal education might influence teachers' understanding of and use of AI-supported teaching tools.

Overall, by enabling the identification of both shared patterns and distinct perspectives across demographic groups, the participants' diverse demographics increased the qualitative analysis's trustworthiness. These traits offer a crucial basis for comprehending the qualitative results and evaluating teachers' perspectives and experiences in relation to their work and educational environments.

4.2.2. Theme 1: Sources of Knowledge About Artificial Intelligence and Its Perceived Influence on Teaching Practices

The sources of teachers' AI expertise and how this knowledge affects their teaching methods are a major issue. Instead of receiving formal professional training, most participants said they learned about AI through unofficial sources, including the Internet and digital media.

Table 23. The Frequencies of the words

Code	Frequency	Percentage
Internet	7	46,67
Social Media	4	26,67
Colleagues	3	20,00
Workshops	1	6,67
Total	15	100,00

According to the frequency table it can be seen that most of the participants learned AI with the help of websites by themselves.

For instance, one participant stated:

- “I got information from the Internet. I think artificial intelligence can support teachers, especially in preparing materials.” (P1)

Similarly, another participant emphasized self-directed learning:

- “I mostly learned about AI by myself through online platforms. It helps me generate ideas, but I still decide how to use them in class.” (P3)

The impact of AI on teaching methods was assessed as limited but increasing, despite the fact that participants acknowledged its utility. Rather than significant pedagogical shift, AI was mostly linked to efficiency and inspiration. This implies that instructors' use of AI is still exploratory and supplemental, influenced more by their own initiative than by institutional assistance.

4.2.3. Theme 2: Perceived Impact of AI on Teaching Practices

Throughout the analysis across the data set of the views of participants on the role of Artificial Intelligence (AI) in the classroom, it was consistently indicated that AI is perceived as a supportive, assisting tool for Instructional Teachers rather than an alternative to them. When referring to AI's function in education, almost all participants used the terms sort of assistant, consultant, support, or support. A comment from one of the participants illustrates this idea succinctly: "The important part of using AI is to use it as a consultant; not to replace a teacher." (Participant 5) Another participant pointed out that AI will not meet students' needs in the same manner as teachers: "AI can provide suggestions for potential solutions, but AI cannot understand how a student feels or provide the depth of explanation about a topic that a teacher provides." (Participant 8)

Both of these comments support the belief that education inherently has a context-dependent, relational basis. In light of this, the position of educators as predominant authority figures in making decisions within their profession will continue to be supported by the fact that AI will increase (rather than detract from) the professional independence of educators.

4.2.4. Theme 3: Role of Artificial Intelligence in Education

Teachers' conceptions of AI's function in education are a major element in the findings. Participants emphasized that AI should serve as a helper rather than an independent educational agent, and they consistently described it as a supportive or advising tool.

For instance, one participant stated:

- “Artificial intelligence should be used as a helper for teachers” (P5), while another added, “It is important to use AI as a consultant, not as a replacement.” (P5)

Participants also emphasized the significance of upholding human-centered instruction and teacher authority. Teachers stressed that they should continue to have pedagogical responsibility, classroom management, and professional judgment. "The teacher should always be in control of the lesson," as one participant stated (P8).

4.2.5. Theme 4: The Adequacy of Current Educational Technologies

Regarding whether current educational tools satisfy their professional needs, participants had differing opinions. While some expressed contentment, several highlighted infrastructure and educational resource shortcomings.

For example, one teacher noted dissatisfaction:

- "Unfortunately, the educational technologies we use are not sufficient. Classrooms need more interactive and modern tools." (P4)

In contrast, another participant expressed conditional satisfaction:

- "Yes, it meets the requirements, but we want to see more improvement, especially in digital content." (P7)

These answers suggest that contextual factors influence how instructors view AI and technology. Effective deployment of AI may be hampered by infrastructural and resource constraints, even in cases when educators are willing to incorporate it.

4.2.6. Theme 5: Artificial Intelligence and the Teaching Profession

Teachers' opinions about whether AI could replace teaching are a major subject in the analysis. The vast majority emphasized the human element of teaching, rejecting the notion of complete substitution.

One participant made a clear statement:

- "I don't think teachers can be completely replaced by artificial intelligence." (P2)

Another participant went into further detail about the nature of teaching:

- "Teaching is not just giving information. We explain, guide, and communicate with students. AI cannot do this like a human." (P9)

A tiny percentage of individuals admitted that their professional duties would alter, but they described these changes as adaptation rather than displacement:

- "There might be a shift towards artificial intelligence, but teachers will still be needed." (P6)

Teachers feel that AI will change how they teach but will not change who they are as teachers. The use of examples from the participants supports the conclusion that teachers have a thoughtful and unbiased view of AI. Teachers acknowledge the benefits of AI but continually cite their needs for judgment, emotional intelligence, and expertise as teachers. Teachers are concerned with the impact of technological advances on their profession; however, they are not in opposition to technological advances.

There is evidence that districtwide funding for professional development is necessary due to the lack of institutionalised training and uncertainty about the effectiveness of technology. Without access to professional development, teachers' use of AI will be inconsistent and limited in scope.

Table 23. Themes, Codes, Sub-codes and Excerpts Table

Theme	Code	Sub-code	Participant Excerpt
Sources of Knowledge About AI	Informal Learning	Internet-based learning	"I got information from the Internet. I think artificial intelligence can support teachers, especially in preparing materials." (P1)
		Self-directed learning	"I mostly learned about AI by myself through online platforms." (P3)
	Lack of Formal Training	Absence of institutional support	"We were not given any formal training about artificial intelligence." (P7)
Perceived Impact of AI on Teaching Practices	Instructional Support	Material preparation	"It helps me when I am preparing lesson materials and activities." (P4)
		Idea generation	"AI gives ideas, but I decide how to apply them in class." (P3)
	Limited Pedagogical Change	Supplementary use	"It supports teaching, but it does not change my teaching style completely." (P6)
Role of AI in Education	Supportive Tool	Assistant role	"Artificial intelligence should be used as a helper for teachers." (P5)
	Advisory Tool	Consultant role	"It is important to use AI as a consultant, not as a replacement." (P5)
	Human-centered Teaching	Teacher authority	"The teacher should always be in control of the lesson." (P8)
Adequacy of	Insufficiency	Infrastructure	"Unfortunately, the educational

Educational Technologies		limitations	technologies we use are not sufficient.” (P4)
		Limited classroom tools	“Classrooms need more interactive and modern technologies.” (P9)
	Conditional Satisfaction	Needs improvement	“Yes, it meets the requirements, but we want to see more improvement.” (P7)
	Resistance to Replacement	Irreplaceable human role	“I don’t think teachers can be completely replaced by artificial intelligence.” (P2)
AI and the Teaching Profession	Professional Transformation	Role evolution	“There might be a shift towards artificial intelligence, but teachers will still be needed.” (P6)
	Human Interaction	Emotional and social aspects	“Teaching is not just giving information; it is communication and guidance.” (P9)

Aligned with the research questions, the findings demonstrate that:

- English language teachers perceive AI as beneficial for instructional support, yet limited in addressing human-centered aspects of teaching (RQ1).
- Teachers’ generally positive attitudes toward AI are moderated by limited readiness, shaped by informal learning and lack of training (RQ2).
- Perceptions of AI integration vary modestly according to teaching experience and educational level, rather than gender (SRQ1).
- The most significant barriers to AI integration include inadequate infrastructure, lack of professional training, and pedagogical concerns (SRQ2).

CHAPTER V

5. DISCUSSION

The results from both qualitative and quantitative analyses are interpreted and contextualized in this chapter to examine the study's conclusions. Instead of just restating the results, the discussion seeks to understand their implications, pinpoint connections between new themes, and place the findings in the context of the body of research on the use of AI in English language instruction. The chapter aims to give readers a better knowledge of the pedagogical and contextual aspects influencing the use of AI in language classes, as well as the attitudes, experiences, and perspectives of teachers.

While analyzing the data obtained from the study, a multistage and holistic statistical approach was followed. Firstly, to determine the internal consistency of an instrument, Cronbach's Alpha reliability analysis was conducted separately for each section. According to the results all sections have highly internal consistency ($\alpha = .896-.946$). Then, descriptive statistics were used to describe the demographic characteristics of the participants. Independent samples t-tests (gender), one-way analyses of variance (ANOVA) (age groups and education level), and effect size measures (η^2) were reported to examine the effects of demographic variables on AI perceptions. In the final stage, multiple regression analyses were performed to examine the whole effect of age and teaching experience and to find out which variables predict AI perceptions. The findings were interpreted not only statistically but also pedagogically and theoretically in a meaningful way with the help of this multi-layered analytic framework.

5.1. Perceptions of Benefits and Challenges Regarding AI Integration among English Teachers

The findings show that teachers have generally positive perceptions about AI tools' potential benefits for language teaching. Especially, the findings which were obtained within the scope of Section A put forward that the teachers see AI as a valuable tool in terms of individualized learning, providing feedback, and supporting the teaching process. In this point multiple regression analysis showed that teaching experience is a meaningful variable for AI integration to the classes. This situation may stem from that as teachers gain experience, they can appreciate the pedagogical contributions of AI in a more realistic and functional perspectives. According to the TAM, technology adoption intention is shaped with

perceived usefulness (Davis, 1989). Studies on teacher examples also show that teaching experience performs as an indirect element that consolidates perceived benefit (Teo, 2009; Scherer et al., 2015). Recent studies which were conducted about the context of AI showed that the teachers' levels of finding AI tools beneficial rise with classroom application experience and technical knowledge (Chen et al., 2020; Tekin & Polat, 2023). At this point it can be said that teaching experience plays an important role in teachers developing positive perceptions of artificial intelligence.

When the teachers' perceptions of the benefits and challenges of integrating AI tools were studied, the results showed that the educational level had an important effect on the perceived benefits but there was no meaningful difference in the perceived barriers. The meaningful results which were got about Section A show that teachers who have master's degree have wider perspective for the pedagogical inputs. This finding is in line with the studies which brought forward that advanced academic education helps teachers appreciate the pedagogical potential of new technologies more consciously and critically (Demir & Kaya, 2022; Yılmaz, 2023). Teachers who have master's degree are exposed to survey based pedagogical approaches and new technological innovations and this situation can explain that they perceive the contribution of AI in areas such as personalized learning, feedback, and teaching efficiency.

Section B results, which were about perceived barriers and challenges, offer a different pattern. T- test, ANOVA and multiple regression analysis which were carried out in this section showed that none of demographical variables are not meaningful predictor for this section. This finding suggests that teachers' worries about AI integration are based upon structural and systemic matters rather than demographical characteristics. In the literature the main obstacles to AI integration were identified as data privacy, ethical uncertainties, lack of technical infrastructure and insufficient corporate support (Cojean et al., 2023; Holmes et al., 2019; UNESCO, 2023). Additionally, some studies highlight that institutional expressions and common professional cultures rather than individual demographic characteristics give shape to general awareness and basic ethical approaches to AI (Zhai et al., 2021; Cope et al., 2023).

The studies which were conducted in Türkiye teachers' drawbacks about the use of artificial intelligence in classes are less related to age, gender, or educational level and more connected to issues such as the lack of in-service training, inadequate technical infrastructure, and problems with institutional support (Demir & Kaya, 2022; Gül & Çelik, 2023). This situation explains why the demographical variables were not meaningful predictors for

section B.

5.2. The Impact of Teachers' Attitudes and Readiness Levels on AI Integration

The findings regarding teacher attitudes and readiness levels measured under Section C indicate that demographical variables are not meaningful for this section. This finding coincides with studies that find artificial intelligence literacy, self-efficacy perceptions, and opportunities for professional development are more effective in explaining teachers' readiness (Bandura, 1997; Scherer et al., 2020). Studies which look at teachers' awareness of artificial intelligence show that demographical variables have limited effect on readiness of teachers to AI, on the other hand, pedagogical training, practice-based experiences, and institutional guidance have a stronger effect on readiness (Aydın & Güngör, 2022; Yılmaz, 2023). Previous studies also show that teachers need pedagogical guidance about the integration of AI in their classes and this situation limits their readiness level (Demir & Kaya, 2022; Öztürk & Arslan, 2021).

5.3. Gender Differences in Section A, B, and C Regarding AI Integration in ELT

While this research considers how men and women view AI within the context of English language education through three domains (Observed Benefits (A), Observed Barriers (B) and Attitude and Willingness to Use AI (C)), it also seeks to understand if there are any differences between male and female English language teachers regarding their views of the integration of AI. Because of the lack of consensus among previous studies regarding the influence of gender on innovation and the use of technology in education, it is especially important to understand how gender-based disparity may exist.

Results from this study show that there was no statistically significant difference in male and female teachers' opinions regarding the perceived benefits of integrating AI into the English language classroom. For example, both male and female teachers had similar levels of perception of some of the benefits AI has to offer educators in providing product personalization, automated feedback and increased instructional efficiency. These findings support the hypothesis that both male and female educators are increasingly seeing the value of incorporating future technological advances in their teaching practices, as they generally view AI as a significant teaching tool for both genders.

The results suggest that the professional identity of instructors as language instructors has a greater effect on the perceived benefits of using AI than gender. The data reveal that both female and male instructors have very similar barriers related to integrating AI, such as the security of their data, ethics related to AI use, mistrust in AI outcomes, maintaining academic integrity, and lack of institutional oversight. The shared perspective from both groups indicates that concerns regarding the integration of AI education are viewed as organizational or structural, rather than gendered.

This finding is consistent with other literature indicating that gender does not impact the use of AI by teachers if the teacher possesses a minimum level of digital competence (Hazzan-Bishara, 2025; Cabero-Almenara et al., 2024).

The lack of significant differences associated with gender across Sections A, B, and C of this research indicates that the attitudes, beliefs, and readiness of instructors to use the AI to integrate into their instruction of the English language are not primarily driven by their gender. Rather, it indicates that digital and AI-based tools are becoming a normal part of the instructor role and that institutional factors and common educational objectives supersede demographic issues.

Based on this research, it should be evident that professional development strategies designed to be neutral to gender would adequately support the integration of AI into ELT. As a result, educational policymakers and organizations should develop strategies that address improved AI-related pedagogical literacy, awareness of ethical issues surrounding AI, and training to assist teachers with implementing AI-based pedagogical practices. This approach is similar with suggestions which were made by not only Turkish but also international literature regarding the need to create inclusive, practical, and policy-based frameworks to support long-term use of AI technology in education (Arslan, 2025; Yim, 2024).

5.4. Differences in Sections A, B, and C According to Teaching

Experience in AI Integration

With the exception of teachers with very limited or extensive professional experience, there were statistically significant differences in the perceived benefits of integrating AI tools across all experience groups, with mid-career teachers generally reporting higher levels of perceived benefits compared to less experienced and more experienced teachers of this group. This pattern suggests that teachers are likely to identify the potential benefits of using AI tools for instructional purposes only after they have developed a sufficient level of experience

in the classroom and prior to adopting rigid teaching practices.

Our findings support previous literature indicating that teachers with the pedagogic expertise to effectively use AI-powered technologies for instructional purposes perceive greater value in these technologies than do less experienced teachers (Cabero-Almenara et al., 2024; Arslan, 2025); this difference is likely due to lack of classroom management experience and instructional confidence, which is common among non-experienced teachers though they may possess a high degree of enthusiasm for using technology. Conversely, far too frequently, experienced educators view enormous value and many positive outcomes as a blessing due to a familiar system of instructional methods and an overall preference for more traditional methods (Hazzan-Bishara, 2025)

The data failed to support any statistically significant differences among levels of teaching expertise in the perceived barriers to the adoption of AI technologies. Ethical dilemmas; issues surrounding data privacy; uncertainty surrounding the reliability of AI-generated content; and perceived lack of institutional support were expressed regarding barriers by educators at all levels of teaching expertise. This result indicates that barriers to adopting AI technology may not necessarily represent obstacles limited to teaching experience but, rather, represent systemic and structural barriers.

Research to date consistently identifies ambiguous policy guidelines, lack of professional development opportunities, and uncertainty regarding ethical responsibilities as barriers experienced by all levels of teaching when attempting to implement AI in the classroom (Yim, 2024; Doğan, 2023.).

5.5. Age Differences in Sections A, B, and C Regarding AI Integration in ELT

This study looked at how English language teachers view using artificial intelligence (AI) in classrooms, focusing on differences by age. There was a clear difference between age groups in how they saw the benefits of AI ($F = 14.03, p < .001$). Teachers aged 20–29 had the lowest average score, while those aged 30–39 saw the most advantages, followed by the 40–49 and 50+ groups. Further analysis (Tukey HSD) showed that the 30–39 group was significantly different from the 20–29 and 40–49 groups. This means that teachers in the middle of their careers saw more benefits to using AI in teaching. Age explained much of this difference, with an effect size of $\eta^2 \approx .12$, showing a moderate impact.

According to these results, the data from this study can be evaluated as consistent

with studies in the literature that support issues such as the production of teaching materials with the help of artificial intelligence and the possibility of providing personalized feedback (Arslan, 2025; Doğan, 2023). In addition, there is a strong connection between pedagogical expertise and the use of artificial intelligence technologies. According to the research results, the most productive and effective age group in terms of artificial intelligence integration is the 30-39 age range.

Teachers between the ages of 20 and 29, on the other hand, may have less classroom experience and be less confident when using AI tools into organized educational designs, which could account for their lower benefit perception. Despite the common belief that younger educators are "digital natives," technological proficiency does not often translate into pedagogical preparedness for AI-supported instruction (Cabero-Almenara et al., 2024).

Attitudes and preparedness for AI integration also showed significant age-related differences ($F = 7.59$, $p < .001$). Once more, teachers in the 30- to 39-year-old age range showed the highest levels of preparedness, followed by those in the 50+ and 20- to 29-year-old groups, and those in the 40- to 49-year-old range reported the lowest mean score. The 30–39 group differed considerably from the 20–29 and 40–49 groups, according to Tukey post hoc results. Despite the reduced impact size ($\eta^2 \approx .07$), there appears to be a significant correlation between readiness and age.

Similar to the research findings, the presence of Self-Efficacy, Perceived Utility, Institutional Support, and Confidence in Classroom Implementation were also preparation elements for AI adoption (Hazzan-Bishara, 2025; Yim, 2024) and Attitudes Towards AI. Teachers aged 30 to 39 had more balanced professional maturity and openness toward innovation, which likely contributed to their ability to be better prepared for using AI and consider it as an instructional tool rather than a disruptive force. Instructors' Attitudes Towards AI and preparedness level were generally positive, as shown in research conducted within the Turkish context (Doğan, 2023.).

AI Integration-related Perceived Barriers between the age groups did not show statistically significant differences ($F = 2.24$, $p = 0.083$) between Sections A and C, suggesting that instructors within the 20 to 29, 30 to 39, and 40 to 49 age ranges had an equivalent understanding of the perceived barriers associated with using AI in ELT. One must approach this finding with caution due to the lower sample size for the 50+ age group reporting a lower mean score.

Other worries related to AI such as moral dilemmas, Data Privacy, Reliability, Biases, Academic Integrity and the Lack of Institutional Policy seem to be a worldwide concern

across all age groups based on research findings. These concerns continue to be cited as potential barriers for teachers, regardless of their demographic characteristics, according to previous studies (Yim, 2024; Arslan, 2025). Older educators (50 years and older) ranked significantly lower on the potential use of artificial intelligence (AI) in their teaching practice than teachers in younger age groups (21-29). An inference drawn from the findings is that older educators' low ranked perceived barriers (high level of confidence) in the application of AI was attributed to older educators' indirect application of AI; thus, less awareness of risk (compared to younger teachers) rather than confidence. Therefore, on average, instructors aged 30-39 represent the most favourable demographic group to introduce AI technology into their teaching practice due to a significant amount of readiness to use AI, perceived value and/or benefit associated with AI in the classroom, and comparable perceptions regarding barriers to AI use compared to all other age groups. In contrast, younger teachers (20-29) scored much lower on all factors suggesting that targeted professional development is required in classroom management using AI technology, integrating AI technologies into pedagogy, aligning assessments to AI, and using AI ethically. Evidence from the findings supports the notion that the age of the teacher interacts (education experience, school context, and teacher supports) in shaping the beliefs about accepting AI into their practice. Consequently, teacher professional development should occur according to the phases of career development, with mid-career teachers acting as mentor/innovators while young teachers receive formalised training on how to incorporate AI into their teaching practice. Researchers in previous studies in Türkiye have suggested that targeted professional development (i.e. support for ethical and sustainable ways of using AI technology) will promote the ethical and sustainable integration of AI technology into English language instruction (Byrd, 1989).

In addition to the demographics, this study also examined whether the level of educational attainment (undergraduate, graduate, doctorate) impacts how AI is integrated into education. Because of the increased opportunities provided by educational level in terms of academic literacy and reflective pedagogy, this variable should also be viewed as an important factor in integrating AI within the classroom.

The analysis reveals that education level is a significant and valid variable, as there is a marked difference in the use and perception of AI between those teachers with a bachelor's degree versus those with a master's degree or doctorate. This difference also can be explained by the fact that those teachers possessing master's and doctorate degrees typically possess more competencies in regard to academic literacy and technological proficiency than do

teachers holding a bachelor's degree.

Many of the studies performed in Turkey illustrate that teachers who have attained postgraduate education generally hold favourable attitudes towards the possible benefits of AI (Sütçü & Sütçü, 2023). Additionally, these teachers have the ability to quickly test new teaching practices when attaining an advanced academic level.

The barriers perceived by the educational community in integrating AI into educational settings do not demonstrate a significant difference concerning educational status; therefore, the educational status variable does not represent a meaningful variable. Rather than demonstrating a significant difference, the issues, challenges, and deficiencies associated with integrating AI into the educational system are viewed similarly across all levels of education and are not a valid variable. Previous research studies in the literature (Yim, 2024) have supported the findings of this study that the most significant barriers perceived by teachers in integrating AI into education are rooted in organizational and policy considerations. As such, the study results indicate it is not the educator's level of education that is the most important factor, but rather the system and pedagogy that have been followed to aid in the integration of AI (Aydın & Güngör, 2022).

The education level variable is particularly important in assessing the benefits and readiness to integrate AI into the classroom, as supported by the results of the study. The education level variable appears to predict success among educators holding a master's degree or higher when integrating AI. Conversely, educators with lower educational levels and/or less experience remain significant variables; however, the ability to collaborate with colleagues and/or more experienced peers may help increase their capacity to successfully utilise AI. Suggestions for differentiation based on this level of experience can be found in the literature and from multiple sources (Yim, 2024; Aydın & Güngör, 2022).

5.6. Integrated Discussion: The Role of Demographic and Professional Variables in AI Integration in ELT

This study, which examines the variables of age, gender, education level, and professional experience (perceived benefits (Section A), perceived obstacles (Section B), and attitudes and readiness (Section C)), evaluates in detail the perceptions of English teachers regarding the integration of artificial intelligence into their classrooms. When the results of the research are considered as a whole, professional experience and education level provide significant data regarding teachers' integration of artificial intelligence into their classrooms,

while demographic variables do not show a significant difference. However, teachers' positive perceptions and readiness regarding artificial intelligence yield significant results in terms of teachers' integration of artificial intelligence into their classrooms.

According to the results, while gender did not yield significant results regarding the perception of artificial intelligence and its integration, the educator's age and, proportionally, their professional experience, as well as their educational level, emerged as significant variables. Consistently within themselves, teachers with master's degrees, those in the 30-39 age group, and those with moderate professional experience showed significant results in integrating artificial intelligence into their classrooms. These three groups comprehensively recognized the pedagogical possibilities of artificial intelligence. Studies (Cabero-Almenara et al., 2024; Arslan, 2025) have shown that educators who are better-rounded pedagogically can successfully take AI from being a cutting-edge technology and turn it into a teaching aid that yields results. When considering the use of AI in education, even the most digitally savvy teachers can struggle with the cohesive integration of AI into the educational design, with older or less experienced teachers facing a particularly difficult roadblock to perceived success.

Similarly, regarding the integration of artificial intelligence into the classroom and the readiness levels of educators for AI, while gender was not a significant variable, it was observed that well-educated educators in the middle of their careers had higher readiness levels. Based on these results, it can be said that educators' positive attitudes towards AI support their readiness levels. The most influential factors on educators' readiness levels are research-based training received in their teaching processes, positive pedagogical approaches, and self-efficacy (Hazzan-Bishara, 2025; Yim, 2024).

5.7. Discussion on Qualitative Study

This study examined how English language instructors use and feel about artificial intelligence (AI) tools in their lessons. The qualitative results demonstrate a nuanced approach in which teachers acknowledge the educational potential of AI while articulating their pedagogical, professional, and contextual concerns. Recent studies (Zawacki-Richter et al., 2019) are consistent with this comprehensive perspective, highlighting how instructors' acceptance of AI is influenced by perceived benefits and disadvantages.

The study has found that teachers view artificial intelligence as an effective teaching tool, particularly in areas such as material preparation, idea generation, and lesson planning.

According to previous research (Holmes et al., 2019; Luckin et al., 2016), AI does not replace basic teaching techniques but rather best helps in the administrative and preparatory stages of teaching. Artificial intelligence can be accepted valuable because of its ability to enhance efficiency and creativity in English language teaching.

Nevertheless, participants expressed significant concern about the pedagogical limitations of artificial intelligence, particularly regarding the interactive and communication-focused aspects of language learning. Some teachers emphasized that human interaction, emotional sensitivity, and contextualized explanation are crucial in language education. Kukulska-Hulme (2020) states that language acquisition is fundamentally social and cannot be fully automated without disregarding its communicative basis. According to research on technology-supported language learning (Godwin-Jones, 2018), teachers are crucial in conveying meaning and encouraging participation.

Despite teachers' positive outlook on artificial intelligence, it was observed that they were not prepared to use AI in depth. It can be concluded that the vast majority of participants acquired information about AI independently, and learning environments did not play a role in this process. Similarly, in the study by Zawacki-Richter et al. (2019), it was seen that teachers had to make efforts and exert themselves independently because institutions did not provide training support on AI. As in both studies, while this type of individual (self-learning) should be supported, it is also a process that is prone to negative consequences.

Additionally, the results indicate that teachers exhibit a strong balance between their readiness for AI and their desire to maintain professional control and pedagogical influence. A large proportion of participants firmly held the view that AI should leave instructional decision-making to the teacher as usual. This view is consistent with the finding in Ertmer and Ottenbreit-Leftwich's (2010) study that teachers' style of integrating technology into their lessons is largely influenced by their perspectives on teaching and learning. Rather than exhibiting a negative view of AI, the teachers participating in this study are considered to be willing to use technology appropriately and in a way that is inevitably consistent with pedagogical principles.

The study concludes that teachers who have recently begun their teaching careers focus more on the practicality that artificial intelligence offers for in-class and out-of-class activities, while teachers with many years of experience in the profession are concerned that artificial intelligence may harm the existing human aspects of education, adopting a cautious perspective rather than focusing on practicality. This result is consistent with a study

conducted in a different country and educational environment (Tondeur et al., 2017), which concluded that individuals who have been teaching for many years incorporate new technological elements in education by drawing on their safe spaces, namely their pedagogical frameworks. Although meaningful data could not be fully obtained in the evaluation, it can be said that more educated teachers demonstrate a higher level of awareness in the process of incorporating artificial intelligence into education.

According to the study results, one of the most significant factors hindering the effective and efficient use of artificial intelligence in educational settings is a number of infrastructural and institutional constraints within educational institutions. In this study, the majority of participants mentioned technological inadequacies in educational institutions and a lack of institutional support in accessing AI-powered resources. This result aligns with studies in the literature which find that technology integration is directly affected by areas such as infrastructure, institutional support, and technology access (Tondeur et al., 2017). In addition, according to the study, another area that limits teachers in terms of artificial intelligence is the lack of a structured education program at this point.

According to the results of this qualitative analysis, language teachers see AI to be useful in educational settings but still a limited phenomenon in classroom settings. To be able to use AI effectively in education, human intervention, an effective and efficient educational program, and finally a supportive institutional environment are required. This research also supports numerous current studies on the topical subject of artificial intelligence, including educators' expectations.

CHAPTER VI

6. CONCLUSIONS AND RECOMMENDATIONS

The overall findings of the study are presented in this section, based on a comprehensive analysis of qualitative and quantitative results. This section aims to highlight the key findings of the research by bringing together teachers' views, attitudes, and experiences. It also aims to provide recommendations for future research, educational policy, institutional practice, and the inclusion of artificial intelligence in English language teaching.

6.1. Conclusions

This study examined English teachers' views, attitudes, and experiences regarding the use of Artificial Intelligence (AI). Both quantitative and qualitative data were used. Considering the results obtained from both data streams, we can say that teachers are generally positive but cautious about the use of AI in English language schools.

Quantitative results showed that most of the teachers have faith in AI tools are helper to improve education. On the other hand, the use of AI in classes is still rare. The results show that there is no meaningful difference between age or gender, but the changes of the teachers' views may stem from educational level and teaching experience.

Qualitative findings give deeper insight into teachers' understanding and using of AI practically. Teachers generally said that AI is a technology which can help us while developing material, planning lesson and generating idea but it is not a technology which can replace teaching tasks. Participants consistently emphasized throughout the data that AI can not replicate relational and communicative features like empathy, guidance and contextualized explanation. These qualitative findings largely support the quantitative findings that teachers view artificial intelligence as a substitute rather than a supportive teaching tool.

Additionally, combining qualitative and quantitative data shows that teachers are not ready to integrate AI into the classroom settings. While qualitative research shows that most teachers rely on informal and self-directed learning to gain knowledge about artificial intelligence, quantitative results show a generally positive attitude toward artificial intelligence. The failure of positive attitudes to translate into systematic classroom application may stem from a lack of institutional guidance and planned professional development opportunities.

This study's results show that teachers see AI as an educational tool and if it is used effectively, it can enhance the teaching setting. On the other hand, human intervention, pedagogical adaptation and adequate institutional support are needed to be able to use this potential of AI. So, AI integration into language classrooms is not only a technological process but also a systematic educational process.

6.2. Recommendations

In this section, based on the integrated analysis of the qualitative and quantitative data which obtained in the study, a number of recommendations are presented to various stakeholders in education.

6.2.1. Recommendations for Educational Policy

Education authorities should prepare systematic in- service training programs to be able to integrate of AI tools into English language classrooms. These programs should be prepared by taking into account not only technical skills but also ethical issues, teacher autonomy and discipline. There is also need for clear rules and guidelines to be able to establish encouragement for the appropriate and effective use of AI in classrooms.

6.2.2. Recommendations for Schools and Institutions

Schools must support their stakeholders in accessing AI applications that require secure Internet connections, hardware suitable for institutional use, and financial resources. It is also important for institutions to provide educators with environments where they can develop their skills in artificial intelligence and share knowledge. The opinions of teachers, who are the cornerstone of education, should be taken into account regarding the integration of artificial intelligence into the educational curriculum and the use of artificial intelligence tools in the classroom.

Teachers need the support of schools for accessing AI applications because these applications need secure Internet connections, hardware suitable for institutional use and financial resources. The schools must back up their teachers about this issue. Besides, the school should provide appropriate environments for their teachers to develop their AI skills and share their knowledge with each other. Teachers are seen as a cornerstone for educational settings, and they should be taken into account while making a decision about the integration of AI tools into the class.

6.2.3. Recommendations for Teachers

Teachers should consider AI as a useful teaching tool for students rather than something to replace theoretical data. AI-generated materials should be adjusted according to the needs of students especially in communicative language education environments. Teachers should struggle to get a chance for ongoing professional development to improve their pedagogical competency and AI literacy.

6.2.4. Recommendations for Future Research

For future research it can be suggested that using mix- methods design and bigger sample sizes improve the generalizability of results. The study, which takes into account students' opinions about AI use in language education, can provide deeper understanding. An experimental or long- term research may investigate the effects of AI technologies on learner autonomy, motivation, language proficiency.

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APPENDICES

Appendix 1. Questionnaire “Exploring Teachers’ Perceptions Toward the Integration of AI Tools in the Language Classroom”

This study aims to examine teachers’ perceptions regarding the integration of AI tools in English language classrooms. The research measures the perceived benefits of AI in language teaching, the challenges encountered, and teachers’ attitudes and readiness toward these tools. The questionnaire developed as the data collection instrument consists of three main sections: (1) perceived benefits of AI in language teaching, (2) barriers and challenges to integration, and (3) teachers’ attitudes and readiness. In addition, basic demographic questions such as gender, age, teaching experience, and educational level are included to determine the profiles of the participants.

Demographic Information *(Please tick or fill in the appropriate answer)*

1. Gender:

- ☐ Male
- ☐ Female
- ☐ Prefer not to say

2. Age Range:

- ☐ 20–29
- ☐ 30–39
- ☐ 40–49
- ☐ 50+

3. Teaching Experience (in years):

- ☐ Less than 1 year
- ☐ 1–5 years
- ☐ 6–10 years
- ☐ More than 10 years

4. Educational Level:

- ☐ Bachelor’s degree
- ☐ Master’s degree
- ☐ Doctorate
- ☐ Other: _____

Section A: Perceived Benefits of AI in English Language Learning (20 items)					
Item	1 = Strongly Disagree	2 = Disagree	3 = Neutral	4 = Agree	5 = Strongly Agree
can help students save time in completing tasks.					
2. AI can provide students with access to information in diverse fields.					
3. AI can translate learning materials into different languages to enhance understanding.					
4. AI helps students better understand complex theories and concepts.					
5. AI improves efficiency and productivity in students' writing tasks.					
6. AI provides personalized feedback tailored to individual student progress.					
7. AI motivates students to learn English more actively.					
8. AI enhances					

students' ability to explore topics independently.					
9. AI helps students develop their writing ideas more clearly.					
10. AI improves language accuracy and grammar in students' work.					
11. AI increases learner autonomy in the classroom.					
12. AI supports differentiated instruction based on individual learning needs.					
13. AI fosters students' creativity in language use.					
14. AI allows students to interact with content in real-time.					
15. AI can simulate real-world communication situations for practice.					
16. AI reduces students' dependence on the teacher for basic information.					
17. AI enhances collaborative					

learning through shared platforms.					
18. AI tools are accessible and easy to integrate into daily classroom activities.					
19. AI helps teachers monitor and track students' progress.					
20. Overall, AI provides meaningful benefits for students' language learning in class.					
Section B: Perceived Barriers and Challenges of AI Integration (15 items)					
21. AI may provide unreliable or biased information to students.					
22. AI can generate inaccurate or false references.					
23. AI may produce logically flawed or contradictory responses.					
24. AI may increase the risk of cheating and plagiarism					

among students.					
25. AI use could reduce students' critical thinking skills.					
26. AI discourages students from brainstorming original ideas.					
27. AI tools may reduce the need for students to learn grammar rules.					
28. AI could widen the digital divide among students with unequal access.					
29. AI tools may be difficult for teachers to supervise effectively.					
30. Teachers may lack sufficient training to use AI tools properly.					
31. AI tools may distract students from learning objectives.					
32. Teachers may have concerns about data privacy when students use AI.					
33. AI may reduce opportunities					

for human interaction in the classroom.					
34. Students may become overly reliant on AI for academic tasks.					
35. The fast pace of AI development makes it hard for teachers to keep up.					
Section C: Teacher Attitudes and Readiness Toward AI in Language Classrooms (10 items)					
36. I am confident in my ability to integrate AI tools into my teaching.					
37. I believe AI can complement traditional language teaching methods.					
38. I am interested in receiving training on how to use AI in the classroom.					
39. I feel that AI tools align with my teaching philosophy.					
40. I believe that AI will become an essential tool					

in language teaching.					
41. I am open to experimenting with new AI tools for language learning.					
42. I consider AI a valuable aid rather than a replacement for teachers.					
43. I regularly explore new technologies to support student learning.					
44. I feel supported by my institution in adopting AI tools.					
45. I am willing to advocate for responsible AI use among students.					

Appendix 2. Interview Questions “The Role of Artificial Intelligence in K-12 ELT Classrooms: Teachers’ Views and Experiences”

1. Where did you learn about Artificial Intelligence (AI), and do you feel that it impacts your practices in teaching?
2. In your opinion, how might AI change the professional practice of teaching? What role do you see AI playing in the future of education?
3. If you have used any AI-supported tools or applications in your lessons, how would you estimate that experience?
4. How do you see AI supporting you with respect to lesson planning, material preparation, or student assessment?
5. Have you faced any challenges regarding your use of AI applications? If so, what were they and how did you respond?
6. Are there any opportunities for training or sharing knowledge about AI in your school or teaching community? What support might you receive?
7. How do you feel about the suitability of AI tools for your subject area or students' age group? Why do you think so?
8. In your perspective, why is (or is not) it important for a teacher to be AI literate?
9. Do the educational technologies that you use meet your needs? What would you like to see improved, if anything?
10. Some people think that the professional jobs of teachers will be entirely replaced by AI. What do you think about this?

Appendix 3. Approval of Ethical Committee

Evrak Tarih ve Sayısı: 14.08.2025-279466



T.C.
AMASYA ÜNİVERSİTESİ
Bilim Etik Kurulu
Sosyal Bilimler Etik Kurulu



Sayı : E-30640013-100-279466
Konu : Etik Kurul Başvurusu

14.08.2025

Sayın Dr. Öğr. Üyesi Hayriye AVARA
Öğretim Üyesi

İlgi : 06.08.2025 tarihli ve 278063 sayılı yazı.

"The Role of Artificial Intelligence in K-12 ELT Classrooms: Teachers' Views and Experiences (Yapay Zekanın K-12 İngilizce Öğretimi Sınıflarındaki Rolü: Öğretmenlerin Görüş ve Deneyimleri)" adlı araştırmanız Sosyal Bilimler Etik Kurulu tarafından bilimsel araştırma etiği yönünden incelendi ve değerlendirildi. Konu ile ilgili kurul görüşü ektedir.

Bilgilerinizi rica ederim.

Doç. Dr. Seda SABAH
Etik Kurul Başkanı

Ek:

- 1- Dr. Hayriye Avara Başvuru Değerlendirme 1 (1 Sayfa)
- 2- Etik Kurul Başvurusu (16 Sayfa)

Bu belge, güvenli elektronik imza ile imzalanmıştır.

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	AMASYA ÜNİVERSİTESİ SOSYAL BİLİMLER ETİK KURUL DEĞERLENDİRME FORMU

Araştırmanın Başlığı : The Role of Artificial Intelligence in K-12 ELT Classroom Ek-1 Teachers' Views and Experiences (Yapay Zekanın K-12 İngilizce Öğretimi Sınıflarındaki Rolü: Öğretmenlerin Görüş ve Deneyimleri)	
Başvuru Formunun Etik Kurula geldiği tarih	05.08.2025
Başvuru Formunun Etik Kurulda incelendiği tarih	08.08.2025
Karar tarihi	08.08.2025

SONUÇ

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2.	☐ Düzeltme gereklidir: Etik sorun olabilecek sorular/maddeler, süreçler ya da unsurlar bulunmaktadır. Açıklama:
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Appendix 4. Permission Mail for the Use of Questionnaire

