

**Digital Competence of Secondary School EFL Teachers: Perceptions, Challenges, and
Practices**

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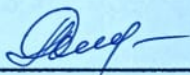
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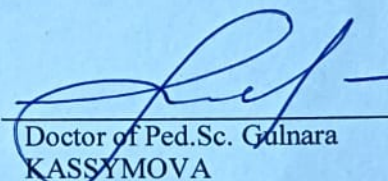
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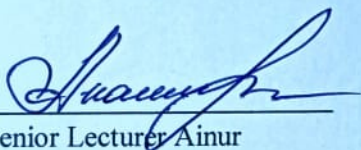
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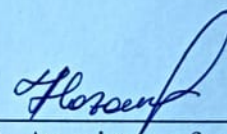
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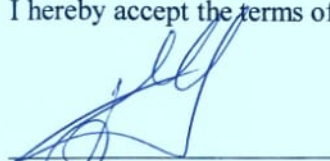


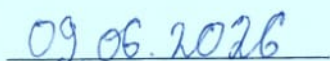
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Finally I am thankful to the community of scholars and researchers whose works on digital competence and EFL pedagogy are referred to in these pages. This thesis aims to contribute to the discussion about the future of teaching, in Kazakhstan focusing on digital competence and language teaching.

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Digital Competence of Secondary School EFL Teachers: Perceptions, Challenges, and Practices

Abstract

Against the backdrop of a national declaration of 2026 as the “Year of Digitalization and Artificial Intelligence” Kazakhstan is carrying out a large-scale reform of its educational system. As for secondary school English as a Foreign Language (EFL) teachers, this change entails a transition from basic Information and Communication Technology (ICT) literacy to advanced, pedagogy-oriented digital competence. The qualitative study examined perceptions, practices and systemic challenges of six EFL teachers in different urban, private and rural settings in Almaty region. This study uses semi-structured interviews and theme analysis to explore how instructors deal with the new “teacher - artificial intelligence (AI) - student” relationship. The research reveals a clear divide in self-efficacy, with many instructors feeling overwhelmed by the pace of change in technology and constant infrastructure problems, while younger teachers in well-resourced workplaces report high levels of confidence and active tool use. Concerns included the rural-urban digital divide, severe time constraints, and lack of on-site pedagogical Information Technology (IT) support, similar to those in the first- and second-order obstacles literature (Ertmer, 1999). The study concludes that for sustainable development of digital competence we should move from the generic ICT training to contextual, practice-based, ‘cyber-pedagogy’ models and formation of formal PLCs to encourage peer support and reduce professional isolation. The study recommendations clearly show that success in the national digitalisation policies requires a balance between the provision of hardware and pedagogical support.

Keywords: Digital competence, EFL teachers, secondary education, Kazakhstan, DigCompEdu, TPACK, artificial intelligence in education

Орта мектептегі ағылшын тілі мұғалімдерінің цифрлық құзыреттілігі: қабылдау, қиындықтар және тәжірибе

Аңдатпа

2026 жыл «Цифрландыру және жасанды интеллект жылы» деп жарияланғандықтан, Қазақстан білім беру жүйесінде үлкен реформа жүргізуде. Орта мектептердегі ағылшын тілі шет тілі (ШТТ) мұғалімдері үшін бұл өзгеріс негізгі ақпараттық-коммуникациялық технологиялар (АКТ) сауаттылығынан озық, педагогикалық бағытталған цифрлық құзыреттілікке көшуді көздейді. Сапалық зерттеу Алматы облысындағы әртүрлі қалалық, жеке және ауылдық жерлерде орналасқан алты ШТТ мұғалімінің көзқарастарын, тәжірибелерін және жүйелік қиындықтарын зерттеді. Зерттеу кезеңінде мұғалімдердің жаңа мұғалім-жасанды интеллект (ЖИ)-оқушы байланысын қалай басқаратынын зерттеу үшін Браун мен Кларктың (2006) зерттеулеріне негізделген жартылай құрылымдалған сұхбаттар мен тақырыптық талдау қолданылды. Зерттеу өзін-өзі бағалаудағы айқын айырмашылықты анықтады: көптеген мұғалімдер технологиялық өзгерістердің қарқынынан және тұрақты инфрақұрылымдық кемшіліктерден шаршағанын сезінсе, жақсы жабдықталған мекемелердегі жас мұғалімдер жоғары деңгейдегі сенімділік пен құралдарды белсенді пайдалануды көрсетеді. Бірінші және екінші ретгі кедергілер туралы әдебиеттерде сипатталған қиындықтарға ұқсас қиындықтарға (Ertmer, 1999) ауылдық және қалалық жерлер арасындағы цифрлық алшақтық, уақыттың қатаң шектеулері және ақпараттық технологиялар (АТ) саласында тікелей педагогикалық қолдаудың болмауы жатады. Зерттеу цифрлық құзыреттілікті тұрақты дамыту үшін жалпы АКТ оқытудан бас тартып, контекстке тән, тәжірибеге негізделген «киберпедагогика» модельдеріне және өзара қолдауды ынталандыру және кәсіби оқшаулануды азайту үшін ресми кәсіби қауымдастықтарды құру қажет деген қорытындыға келеді. Зерттеудің ұсынымдары ұлттық цифрландыру саясатын сәтті енгізу жабдықтармен қамтамасыз ету мен педагогикалық қолдау арасындағы тепе-теңдікті табуды талап ететінін анық көрсетеді.

Кілт сөздер: цифрлық құзыреттілік, ағылшын тілі мұғалімдері, орта білім, Қазақстан, DigCompEdu, TPACK, білім берудегі жасанды интеллект

Цифровая компетентность учителей английского языка в средней школе: восприятия, вызовы и практики

Аннотация

В 2026 году, был объявленном в Казахстане «Годом цифровизации и искусственного интеллекта», школьное образование переживает масштабное изменение. Для учителей английского языка как иностранного (EFL) в средних школах переход от базовой информационно-коммуникационной технологической (ИКТ) грамотности к продвинутой, педагогически ориентированной цифровой компетентности. В рамках качественного исследования были изучены взгляды, практика и системные проблемы шести преподавателей английского языка как иностранного в различных городских, частных и сельских районах Алматинской области. В исследовании использовались полу структурированные интервью и тематический анализ на основе работы Брауна и Кларка (2006) для изучения того, как преподаватели ориентируются в новой связи «учитель-искусственный интеллект (ИИ)-ученик». Результаты показывают значительный разрыв в само эффективности: в то время как многие преподаватели чувствуют себя перегруженными темпами технологических изменений и сохраняющимися недостатками инфраструктуры, молодые учителя в хорошо обеспеченных ресурсами учреждениях демонстрируют высокий уровень уверенности и активное использование инструментов. К числу проблем, подобных тем, что описаны в литературе о препятствиях первого и второго порядка (Эртмер, 1999), относятся цифровое неравенство между селом и городом, жесткая нехватка времени и отсутствие педагогической поддержки в области информационных технологий (ИТ). Исследование приходит к выводу, что устойчивое развитие цифровой компетентности требует перехода от общих ИКТ-тренингов к практико-ориентированным моделям «кибер-педагогики» и создания формальных профессиональных сообществ для взаимной поддержки учителей.

Ключевые слова: цифровая компетентность, учителя английского языка как иностранного, среднее образование, Казахстан, DigCompEdu, ТРАСК, искусственный интеллект в образовании

CHAPTER 1

Introduction

1.1 The Digital Imperative and the Strategic Context

Following its independence in 1991, Kazakhstan established education as a core aspect of its national development strategy, stressing the need to build a modern and competitive country through educational progress. At the beginning of the new millennium, Kazakhstan's commitment was mostly for the short term, but this has significantly changed by the mid-2020s. In October of 2023, President Kassym-Jomart Tokayev announced 2026 would be declared the "Year of Digital and Artificial Intelligence." This announcement not only represents a marketing exercise; it marks a total shift in the country's view of the part Smart Technologies will play in generating economic growth and establishing Kazakhstan within the global economy. Smart Technologies have transitioned from an optional to an essential component of economic growth and international competitiveness.

The development of digital technology in Kazakhstan has greatly improved with the help of many initiatives including Digital Kazakhstan and the government's National Development Plan from 2018 to 2029, which focuses on closing the digital divide and allowing youth to be prepared to take part in a digital economy. The youth demographic commonly referred to as "mobile natives" have been raised in a time period when mobile phones and tablets are prevalent. Although there are impressive statistics such as a 93.4% of the population using the internet and average increases in the speed of mobile downloads per year of 79%, reaching an average download speed of 91.74 Mbps, there is still a lot of room for improvement. Assessing the teacher's effectiveness based on positive statistics alone is not possible; in-classroom

improvements are being made by many EFL (English as a Foreign Language) teachers who teach students using both international communication tools and digital technology.

Today's teaching of English as a Second Language (ESL) involves providing students with language skills and preparing them for a globally connected and digitally connected world. There are many differing views on how technology use in education affects students' learning. Many educators are having difficulty defining the complicated relationship that exists between education and technology. This relationship has many different aspects and is very complicated.

Understanding how educators use digital tools and technologies requires analysis of technology itself and the socio-cultural environments that will impact on their use. These environments include factors such as: school technology policies, systemic factors that inhibit the effective use of technology in the classroom, and the daily challenges that educators face in integrating digital tools into their teaching practice due to limited resources and time. Another framework for understanding educators' perspectives on adopting digital technologies is the construct of "non-stupid optimism." This construct enables educators to appreciate the benefits of adopting digital technologies, whilst also being cognizant of the potential problems with poorly designed or overly simplified solutions, the motivations of corporations to sell their products, and the difficulty in providing equitable access to digital technologies in many public schools.

1.2 The Problem Statement and the Professional Setting of EFL

New technologies have dramatically changed the way that people are taught. They have allowed educators, especially EFL teachers, to improve the quality of their teaching with the help of technological tools. It is not enough for a person to be comfortable using a computer to be digitally competent and able to use those technologies to create an effective method of

communicating and learning for their students. Digital literacy is not just being able to operate computers or software and it is important to understand the definition of digital literacy to this end it also includes the ability to communicate with others (both electronically and in person) effectively with the use of digital technology and ultimately creating a safe space for your students to develop confidence to learn from you and each other through technology.

The line between traditional education and technology-enhanced education is getting more fuzzy in the classrooms today. The “policy-practice gap” is still present in Kazakhstan and secondary EFL teachers encounter considerable challenges in using digital resources. Examples of this misalignment include the significant amount of government funding that has been placed into education, including, the outcome of the Accessible Internet Programme (aiming to connect nearly 1,800 school buildings to the internet via satellite by 2024), yet numerous fundamental issues remain (in 2022 the Programme for International Student Assessment (PISA)) reported that only 36% of 15 year old Kazakh students were achieving at or above state level (compared to the OECD figure of 74%). Starlink has brought high-speed internet connectivity to over 1,700 rural schools, but before we can begin to answer any of the above-mentioned issues, we must first have an understanding of how teachers are planning to effectively utilize it in their classroom across all disciplines.

1.3 Aim and Research Questions

The digital competence(s) of teachers from Kazakhstan’s secondary schools in regard to the teaching of English as a foreign language were analyzed through an examination of their teacher-perception(s) about it, both within a real-life context as well as through three central question-based frameworks borrowed respectively from the works of Bui & Kassymova et. al in addition to everyday observational experiences of teaching professionals:

Perceptions: How do secondary school EFL teachers describe their digital skills, and self-confidence in particular?

Difficulties: What concrete first order (infrastructure) and second order (psychological) difficulties do they face when trying to use digital tools?

Support needs: What support and professional development, formal or informal, do teachers say would really make a difference?

Support Needs: What types of support and professional development, whether formal or informal, do teachers identify as being potentially impactful?

1.4 Significance of the Study

The research conducted to date has been primarily centered on the teachers, with the experiences of practicing secondary school EFL often absent from view. As such, this study serves as the foundation for addressing the reported deficiency. The qualitative research approach used in this study highlights the unique personal stories of EFL teachers that are often not available through large-scale statistical data, but are critical for providing practical, real-world information to school administrators, teacher training professionals, and policymakers who are working to establish professional development programs as they develop their educational institutions during the ongoing digital transformation occurring in Kazakhstan.

1.5 Thesis Structure

The thesis work is split into five chapters.

Chapter 1 provides the background of the research. The issue statement, purpose, and research questions are introduced, and the importance of the study is discussed.

Chapter 2 reviews the digital competency related literature in education. It provides an overview of some of the most relevant theoretical frameworks such as TPACK and DigCompEdu . It

analyses international and regional studies on the digital competence of EFL teachers. It also addresses challenges to technology integration, professional growth, and emerging topics such as artificial intelligence and critical digital pedagogy.

Chapter 3 Methodology of the research. It explains the qualitative study design, selection of Participants, data collection processes, data analysis process and Ethical consideration.

The results of the study are in chapter 4. The results are presented under four main themes that emerged from the data and discussed in relation to the theoretical frameworks and previous research presented in Chapter 2.

Chapter 5 provides a summary of the key findings, acknowledges the limitations of the research and offers recommendations for policy, practice and further research.

CHAPTER 2

Literature Review

2.1 Conceptions of Digital Competencies in Education

Digital competence in today's educational world is not just about the ability to use hardware, software or basic web tools. Today this is seen as a broader capacity that includes confident, critical and creative use of digital tools for communication, problem solving, content production, learning, work and social participation (Ferrari, 2012; Ilomäki et al., 2016).

In the teaching of languages this skill is more complex. Digital competence for EFL teachers is not the technical knowledge but the pedagogical knowledge of how to use technology in ways that successfully enhance language acquisition. In other words, there is more to teachers' knowledge of how a tool works." They also need to know when, why and how it might improve the learning experiences of pupils.

Meanwhile the idea itself is a little tricky to pin down. As Spante et al. (2018) point out in their systematic assessment of higher education research, the terms "digital competence" and "digital literacy" are often employed interchangeably, or without a clear definition. This makes it more difficult to compare results across studies and to build up a coherent body of research. Similarly, Ilomäki et al. (2016) defined digital competence as a "boundary concept", which takes place at the confluence of education policy, academic research and classroom practice, but that is situated differently in different contexts.

But before proceeding further it is useful to distinguish between two often confused terms: digital literacy and digital competence.

The more precise term is digital literacy. Normally it is the basic competence of searching, evaluating, using and creating information using digital tools. It's like, 'can you use

Word? Can you search on Google? “Can you see fake news?” (Spante et al., 2019). Digital competence has a wider scope. It involves digital literacy but adds a level of critical, confident and pedagogical application – especially for teachers. It’s not just about using a tool. It is about knowing when, why and how to use it for a specific teaching goal, in a specific classroom, with specific students (Ilomäki et al., 2016; Redecker, 2017).

This difference is important for teachers of EFL. A teacher might be digitally literate – they can create a PowerPoint. But being digitally competent means they have a choice, between PowerPoint, Canva or Miro depending on the lesson objective, and they can adapt when the internet fails. So this is not about digital literacy. This is about digital competence. And that makes a difference to student learning.

For the purpose of this study, digital competence is defined in a holistic way. It is a contextual competence that combines technical skills with critical and pedagogical reasoning for effective language teaching. This term is useful especially for EFL teachers whose digital activities are not only determined by the tools available to them but also by their teaching aims, institutional situations, students’ demands and larger educational policies.

Castañeda and Selwyn (2018) reinforce this position stating that ‘digital tools are never neutral. Tech, in the hands of teachers, should be judicious about what makes it into their classrooms. Instead of functionality, questions are asked: What is the aim of the tool? Who is the biggest fan of this? What does this mean for education? That kind of thinking is at odds with the concept that more technology will make things better. But one thing is sure - it is very vital to carefully involve teachers in the development of digital learning.

2.2 Integration Theoretical Models

In the literature, there are two main conceptual frameworks that are often cited in relation to teacher digital competence: the Technological Pedagogical Content Knowledge model (TPACK) and the European Framework for the Digital Competence of Educators (DigCompEdu). These two are quite similar in their approach and are useful for understanding the development and use of digital competence by the teachers.

2.2.1 The TPACK model

The Technological Pedagogical Content Knowledge (TPACK) framework developed by Mishra and Koehler in 2006, is premised on the idea that technology cannot be taught in isolation from the pedagogical methods and the subject matter it is meant for. TPACK is a model that can be used to understand how to integrate technology effectively . It is based on the idea that to be able to integrate technology effectively , one needs a good understanding of three aspects : Technology Knowledge (TK) , Pedagogical Knowledge (PK) , and Content Knowledge (CK) . When these areas of knowledge are combined, they form specialized sub-domains where the core concept is Technological Pedagogical Content Knowledge (TPACK) which is the understanding of how technology can be used in conjunction with pedagogy to effectively teach a particular content.

The basic computer skills of an EFL teacher are not enough. The teacher should also be aware of how a technology (e.g. an AI-powered pronunciation app or a collaborative writing platform) relates to the principles of second language acquisition and communicative language teaching.

According to Skantz-Åberg et al. (2022) TPACK remains one of the most influential frameworks in the field of professional digital competence. But they also note that researchers don't apply or

measure the framework consistently. This inconsistency indicates that TPACK needs to be applied in a more context specific and situation specific manner rather than generic way.

2.2.2 The DigCompEdu Framework

The DigCompEdu framework was developed by Redecker (2017) for the European Commission and provides a detailed and useful framework for understanding digital competence of educators. It enumerates 22 competences, grouped in six areas: Professional Engagement, Digital Resources, Teaching and Learning, Assessment, Empowering Learners and Facilitating Learners' Digital Competence.

One of the strengths of DigCompEdu is that it conceptualises teacher growth as a process. Teachers may progress from “Newcomer” at the A1 level, to “Explorer”, “Integrator”, “Expert”, “Leader”, and finally “Pioneer” at the C2 level. This process makes the framework useful to help assess where instructors are at now and what kind of professional support they might need next.

In contrast to approaches that primarily emphasise technical skills, DigCompEdu connects the use of digital tools directly to teaching and learning. It encompasses areas such as formative assessment, personalised learning, learner autonomy and students' own digital competence. This makes the framework particularly relevant to EFL teaching where communication, interaction, feedback and learner engagement are central aspects of the classroom.

DigCompEdu is useful for this study, since it allows for the exploration of digital competence as a professional and pedagogical capacity, and not as a mere list of technical capabilities. It also relates teachers' experiences to their professional development, classroom practices and support needs.

2.3 Digital Competence of English as a Second Language Teachers: International and Regional Trends

There is more and more research on the digital competence of language teachers in different education settings. The results of these studies indicate that teachers generally acknowledge the benefits of digital technologies, but their use of technology varies greatly. This diversity is affected by availability of resources, institutional support, training, ideas about teaching and confidence in the use of technology.

Basilotta-Gómez-Pablos et al. (2022) conducted a systematic review of 56 empirical research studies published between 2000 and 2021, and found that many higher education teachers reported low to medium levels of digital competence. Digital assessment and online student support often have the worst elements. Their analysis was in higher education but the findings suggest a broader trend. Teachers feel at ease with some basic digital tasks but less confident when it comes to using technology for more complex pedagogical reasons.

Bui (2022) examined 20 empirical studies on technology use in the classroom and the related factors influencing technology integration in EFL teaching. The review found that most of the EFL teachers use technology mainly for teacher-centred purposes such as providing information, giving exercises or for administrative purposes. Less popular were more interactive and student-centred uses such as collaborative writing, peer feedback or digital communication activities. Other important factors identified by Bui affecting technology integration are teachers' attitudes toward pedagogy, their self-efficacy, availability of resources, previous training and institutional support .

Similar trends are visible in other international contexts. Eryansyah and Erlina (2023) in their study on Indonesian EFL teachers found that teachers generally had positive attitudes

towards ICT and understood the importance of ICT for student motivation and access to authentic materials. But only about one in four teachers said they used digital tools on a daily basis. The major problems were poor facilities, poor finances and lack of pedagogical training.

Similarly, in a mixed-methods study of Israeli EFL teachers during the COVID-19 pandemic, Meirovitz et al. (2022) found that the nature of the digital work was a major factor in teachers' confidence. Many teachers said they felt somewhat comfortable using existing technologies, but found it difficult to adapt content for online learning, maintain engagement in virtual classrooms and successfully assess students in remote settings. This is relevant for the study because it shows that in a crisis situation, deficiencies in teachers' digital competency might be more transparent than in a traditional classroom setting.

There is important baseline evidence from Kazakhstan (Kassymova et al. 2023). Their study was conducted on EFL teachers in-service who are master students in a private university . Results showed that participants experienced greater competence and satisfaction with digital technology as learners than as teachers. That is a crucial point. This indicates that individual digital literacy is insufficient for successful pedagogical use of technology. Teachers may have some resources for their own research but don't know how to integrate them to the lesson design, classroom dialogue, evaluation or student aid.

Another relevant study was conducted by Rahimi (2024) to explore the elements related to digital competence among EFL teachers in the 21st century. Rahimi (2023) applied partial least squares structural equation modeling and revealed that individual and school-level factors were significant predictors of teachers' digital competency among 863 in-service Iranian EFL instructors. The personal characteristics included TPACK, Ways of accessing information and

good attitude to ICT. At school level determinants were connectivity, access to computers and ICT training opportunities.

Nowadays AI tools are rapidly changing the ways of practicing for EFL teachers. For example, for evaluating writing and grammar they can use Grammarly and Quillbot. For creating vocabulary lists for any level of students, or even to create engaging lessons with a lesson plan, they use ChatGPT or DeepSeek. But, however, there are some limitations. Firstly, the most important issue is cultural, the feedback given by one of those is automated which may overlook the content or the meaning of some words. Secondly, the texts which have been generated by AI, may contain unnatural phrasings or even false information. Thirdly, not only teachers, but also students who use plenty of time, may have problems with their critical thinking skills. Therefore, in this era, digital competence should include not only how to use, but also knowing the limits and when it is appropriate to not use and the methods or ways for teachers to teach students to be more responsible and be more aware.

In Kazakhstan, the relevance of the multi-level model suggests that the development of digital competencies among teachers cannot be explained by one teacher's own individual ability or will. There are therefore several factors that are important for the development of digital competences. This would be things like the environment in which the teacher works, the technology infrastructure, leadership, access to training/professional development for teachers, and the general institutional culture. The differences of levels of digital competency between teachers working in urban, private or rural schools, demonstrate the differences in access and availability of resources (hardware/ software/ support) and also demonstrate the benefit of recognition of the wider multi-level influences on teacher digital competency developments.

2.4 The Barriers of Digital Integration

Many barriers to teachers' use of digital tools for instruction have been identified in numerous studies. Ertmer (1999) suggests a distinction between first and second order barriers to frame this problem.

2.4.1 First-Order Barriers

First-order barriers are barriers to an educator using technology effectively that come from outside influences. This includes things like no or limited hardware, unreliable internet connection, not enough tech support, outdated computers, limited or no access to software, or not enough digital content available.

These limitations are true for rural and less resourced communities, and Kassymova et al. (2023) report that the urban-rural digital divide currently impedes equitable access to technology-enhanced learning opportunities in Kazakhstan. Stronger connectivity from national infrastructure improvements will not, on its own, improve as some of the local circumstances can continue to impair the reliability and effectiveness of teachers' use of digital technologies.

The documentation of these issues in other contexts bears some similarities. For example, Eryansyah and Erlina (2023) found that the main challenges in the integration of ICT in teacher training programmes for EFL teachers in Indonesia were the lack of resources and facilities. These practical challenges are also encountered in schools with more advanced resources such as outdated hardware, limited bandwidth and lack of available support from the technical community when problems arise with ICT.

Such barriers can directly affect the quality of EFL teachers' lessons. A pre-planned listening activity, online quiz, video-based discussion or collaborative writing activity may not happen due to poor internet connection or unavailability of necessary devices. This means that

some teachers may not use digital tools at all, not because they are not interested, but because they are not guaranteed to do so in the present conditions.

Also, apart from technology and internet access, a lot of studies point out that among teachers the digital anxiety and stress due to technologies are increasing. Passey et al. (2023) and Howard et al. (2024), their studies show that teachers with low level of confidence of using technology are more likely to try to avoid using or experimenting a new tool, even though they are useful in their practice. In Kazakhstan, the anxiety gets worse because of the pressure to perform well, high-stakes exams, and lastly, strict curriculum. Mostly teachers worry about wasting precious time and on outcomes. This kind of worries are not unreasonable- actually, it is a rational response to a system.

2.4.2 Second-Order Barriers

Second order hurdles are more internal, psychological. This includes the views a teacher has about the way children learn, how comfortable they are with technology, their willingness to take risks and make mistakes and if they see a tool as actually valuable for their classrooms.

Gudmundsdottir and Hatlevik (2018) discovered that freshly qualified teachers in Norway felt comfortable to use technology for personal purposes but were rather unprepared to use it pedagogically in their study. Digital evaluations, formative courses for students who are lagging behind, working with multiple learners online was pretty daunting. The strongest determinants of a teacher's future confidence were their previous experience of technology, the attitudes they developed throughout university and the opportunity they had for supervised practice during training.

Instefjord and Munthe (2017) also emphasize the importance of teacher education. In their study of Norwegian teacher education curricula, they found ICT and digital competence

were often mentioned but not always explicitly, and the implementation varies between subject areas. Yet, without a planned integration of digital competency in teacher preparation programs, beginning teachers may enter the profession feeling unprepared to fulfill the digital demands of contemporary classrooms .

Many educational institutions have an issue with having a lack of time and support from their administration when trying to use technology in a classroom environment has become almost impossible for an instructor to execute their current curriculum. With many instructors being bogged down with full class loads and heaviness of standardized testing (NCLB), as well as mountains of paperwork due to the Department of Education's requirement of extensive documentation for all educators. Because of this many instructors return to what they know best and rely upon those lesson plans instead of utilizing digital teaching strategies, although it is obvious that there are great benefits in doing so in regard to student learning outcomes.

In 2021, Selwyn and Facer & Selwyn provided insightful criticism of the barriers that are preventing the successful use of technology in education and provided recommendations for what they referred to as `non-stupid optimism`. Both authors noted that the successful use of technology does not simply depend upon an instructor's digital literacy or how much a school has as a budget, it is also influenced by much larger social issues including; cultural beliefs, power relations and policies. This view recognizes that digital technologies provide a great deal of potential for learning while, at the same time, taking a critical view of unrealistic technology promises, commercial interests in technology, and the possible new forms of control that digital platforms might place upon classroom behaviour. The investigation of EFL teachers in Kazakhstan considers more than skill score evaluations; it is important to understand the

institutional realities (e.g. national mandates, funding models, state testing requirements, workplace expectations) that impact a teacher's ability to change their daily practice.

2.5 Professional Growth and Learning Side by Side

Based on research regarding teacher development, the best way to provide professional development for educators is through ongoing collaboration with other professionals in the area of instruction. Professional development that includes isolated training sessions or large group technology training does not usually meet the needs of teachers due to the lack of alignment with how the teacher will actually use the information provided. Many teachers also struggle to connect technology to how they are managing their classrooms, engaging their students, assessing student learning and meeting the goals of the curriculum.

A recent study by Johnson (2020) examined the role of technology in the classroom learning environment in schools across the U.S. The study found that technology was only related to positive student outcomes when the technology was being used appropriately for students' learning. When technology was used primarily for administrative purposes or as a mode of presentation, the impact of technology on student performance was diminished greatly. These findings point to the importance of professional development programmes that offer instruction on both technical and instructional decision making regarding the use of technology.

The effectiveness of Professional Development (PD) clearly shows in the study of Darling-Hammond et al. (2017) in five key features: 1. Instead of one-off events, long-term sessions; 2. More content focuses on the subject-specific pedagogy; 3. Not only theorise, more active learning to practice and to receive feedback; 4. Collaborative works with other colleges or peers; 5. Lastly, more important is alignment with school policies and objectives. To develop or master digital competence among EFL teachers, the training should be produced over several

months and the content of training must be based on actual tools which teachers can use in the classroom. And it must include instructions, demonstrations. Unfortunately, the one-off “ICT seminars ” run against all principals and it is the main reason that teachers do not have strong confidence in using any familiar or unfamiliar tools.

A remarkable example of this was the large-scale professional development initiative in Kazakhstan. In 2025, UNESCO and the National Centre for Professional Development “Orleu” created a statewide training programme on artificial intelligence, training over 252,000 teachers in generative AI models and prompt engineering. Per teacher reports to Kuttybayeva and Doğan (2026), this training was one of the first times they felt very relevant and applicable to what they teach. This points to the significance of professional development in practice – when educators have access to this type of training that is customized to their specific instructional needs, they are more apt to value it more highly. Informal and collaborative learning also has an important role to play alongside formal education.

Yalçın and Bozyiğit (2023) conducted a review of studies related to digital competence in EFL teaching published from 2017 to 2022 and concluded that no qualitative studies have been published on EFL in-service teachers in secondary education in non-European countries. The authors argued that more research is needed on how to combine the affective and psychological dimensions of an individual’s digital competence with the ability to use digital technology. This gap in the literature is particularly relevant to the present study, which aims to investigate the perceptions of EFL teachers, the type of challenges they encounter and the kind of support they require in the context of digital technology use in Kazakhstan.

Research on Professional Learning Communities and near-peer mentoring indicates that instructors derive advantages from environments in which they can exchange materials, discuss

challenges, share experiences, and learn from their peers. These types of communities can reduce the isolation that digital integration can cause. They enable educators to evaluate novel instruments, contemplate their efficacy, and collaborate on solutions. In this manner, collaboration can facilitate the adoption of more sustainable technology than isolated training sessions.

2.6 AI-powered digital skills of learning and multi-modality

Research on the role of generative artificial intelligence in language teaching and teacher training is growing exponentially . Digital capabilities today mean more than computer literacy (Rahimi, 2024). Besides the use of tools, educators are expected to help learners to develop technological capabilities, critically analyze media content and use devices ethically. These demands are in line with models such as DigCompEdu that consider the development of learners' digital development as a core responsibility of educators (Redecker, 2017).

The advent of tools like ChatGPT has generated a mixed response of excitement and serious concern among EFL teachers. “The good news is AI can give kids immediate, personalized writing feedback and automatically grade routine worksheets and generate custom-made reading passages in seconds.” On the other hand, it raises serious concerns about plagiarism, possible deterioration of students' writing skills, and the threat of automation replacing human teaching jobs. To survive in this new digital terrain we need a particular approach to what can be called cyber-pedagogy. It requires not only technical know-how, but also a deep ethical understanding of how AI technologies are transforming the cognitive process of learning a second language.

Multimodal literacy, translanguaging and Universal Design for Learning (UDL) for inclusive classrooms are also shaping much of today's language education.

For instance, Zhao et al. (2021) have demonstrated the unequal distribution of digital skills among university students. They found the development of competence areas was uneven. Students were more confident in communication and information search than in content creation and problem-solving. This unevenness can probably be explained by patterns among teachers and suggests the need for very targeted skill-specific training.

After all, as Castañeda and Selwyn (2018) remind us, the ongoing digitisation of our schools requires much more than basic tech training. It makes us think about what teaching really is, how we grade and what the role of the teacher is. As AI becomes more intelligent and ubiquitous, the central question of our age is less about how we are using AI and more about why we are using AI and what purpose it has in education.

In the digital age, success for EFL teachers in Kazakhstan will absolutely depend on critical judgement based on sound principles of language teaching and a realistic understanding of their local school culture.

CHAPTER 3

Methodology

3.1 Research Design and Approach

This study utilised a qualitative research design to provide in-depth, narrative-based insights on teachers' perceptions. To investigate the "human factor" in digital transformation, a qualitative approach is required to capture the nuances and contextual aspects sometimes missed by external quantitative indicators (Yalçın & Bozyiğit, 2023). The study was conducted under the interpretivist paradigm as it states that knowledge is socially created and that to comprehend human experience it is important to include the participant's meanings and sense-making processes.

Data collection was carried out utilising two complementing methods, semi-structured interviews and written answers by WhatsApp. Triangulation was possible through the use of several data sources, which enhanced the credibility and richness of the results. Interviews provided the opportunity for immediate, off-the-cuff responses as well as the opportunity for follow-up clarifying questions, whereas written responses allowed the participants to provide more thoughtful, detailed responses at their own pace and in their own words.

3.2 Participants and Sampling

The study employed purposeful sampling, a non-probability technique commonly used in qualitative research to identify "information-rich" cases that can illuminate the topic of inquiry (Patton, 2015). The participants were 6 EFL teachers from secondary schools in different districts of Almaty region. Having a varied group was important such that the final participants represented a variety of backgrounds:

- Age and experience spanned from first-year teachers in their early 20s to veterans in their late 30s.
- School Settings: From city state schools and private language schools, to remote village classrooms.
- Teaching Environments: From traditional face-to-face classrooms to 100% online and digital environments.

All participants were assigned pseudonyms (Teacher A–Teacher F) to maintain privacy. Table 1 gives a quick look at who they are and how they rate their own confidence with technology.

Table 1

Participant Demographics and Self-Reported Confidence

Participant	Age Group	Experience	School Type	Confidence (1-10)	Primary Tools Used
Teacher A	Mid-20s	2 years	Private	6/10	Kahoot, Canva, PowerPoint
Teacher B	Mid-30s	5 years	Governmental	5/10	PowerPoint only
Teacher C	Mid-20s	3 years	Governmental	7/10	Bilimland, Wordwall
Teacher D	Late-30s	7-8 years	Governmental	5/10	Google Forms, PowerPoint

Teacher E	Mid-20s	5 years	Private/Rural	10/10	Wordwall, Quizzes, AI tools
Teacher	Late-30s	10 years	Online/Privet	8/10	Miro, Canva, Quizlet

3.3 Data Collection Procedures

Data was collected for a four-week period. All six participants were interviewed semi-structuredly for 30-45 minutes. The interviews were conducted in the language of the participant's choice (Kazakh, Russian or English) following the ethical principles of respect for the participant's voice and comfort. To ensure consistency across participants, an interview guide was used, but with flexibility to follow emergent topics and probe for further elaboration.

Detailed examples of tool usage in the classroom, specific barriers encountered and reflections on professional development needs were elicited through the use of open ended questions. For example, teachers were asked, "Can you describe a recent lesson that included a digital tool?", "What challenges have you encountered?" and "What kind of support or training do you think would best help you develop your digital skills?"

All interviews were audio-recorded with explicit consent of the teachers and transcribed verbatim later. Recordings were transcribed verbatim. Interviews were either conducted in Russian or Kazakh and transcribed in the original language and then carefully translated into English for analysis. The translation process was based on semantic translation, not literal word by word translation, in order to reduce the distortion of meaning. Idiomatic expressions have been annotated in order to preserve their intended sense.

Four teachers (A, B, D and F) also provided written responses to support the interview data. They responded to certain open-ended questions (mirroring our interview subjects) via messaging apps (WhatsApp). The written answers were quite informative, spanning from one to three paragraphs, and providing a more polished, fully studied account of their daily lives.

3.4 Data Analysis: The Thematic Process

To make sense of all the text, data was analysed using Braun and Clarke's (2006) six phase thematic analysis framework. This method was chosen because it is highly flexible, accessible and is well suited to reveal underlying patterns of meaning across a qualitative dataset. The procedure was fully data-driven and inductive. This means that the themes could emerge from the words of the teachers themselves, rather than attempting to fit their words into academic boxes - although the core research questions did help to focus initially.

- **Phase 1: Familiarization**

The researcher engaged with the data by repeated listening of the audio recordings, and by reading through all transcripts and written reflections many times. Preliminary notes were made of prospective points of interest, stunning phrases and emerging patterns.

- **Phase 2: Creating Initial Codes**

Open coding was done by hand on printed transcripts. Passages of text related to digital skills, problems or support requirements were highlighted and short descriptive codes allocated. For example, "I only know the basics of computers" was recorded as "basic proficiency", and "the internet at our school is often down" was tagged as "infrastructure issues".

- **Phase 3: Searching for Themes**

Codes were examined and organised into higher-level theme groups based on conceptual similarity and relevance to the aims of the research. For example, codes “lack of devices,” “poor internet,” and “no IT support” were grouped together under a tentative subject of “First-Order Barriers.” A preliminary thematic map was built to trace connections between codes and prospective themes and sub-themes.

- **Phase 4: Reviewing Themes**

In an iterative process the initial themes were refined against the coded data and the full transcripts. This included checking that there was enough evidence for each theme, themes were internally consistent and they were sufficiently distinct. To clarify the thematic map, some themes were merged or modified. For example, “Technical Issues” and “Institutional Issues” were merged into the general category of “Resource and Infrastructure Challenges.”

- **Phase 5: Defining and Naming Themes**

The last step is to clearly name and define each theme. For example, the theme “Teacher’s Confidence/Self-Efficacy on Digital Skills” relates to the teachers’ beliefs about their ability to use digital tools appropriately and their confidence based on their perceptions of what influences this confidence.

- **Phase 6: Delivering the Report**

The last stage was a full record of the data collected. This chapter will describe how we categorised the data into different thematic areas and will include several quotes from participants for each of the items. The discussion section will contextualise the findings of this study within the existing body of knowledge and the theoretical basis on which the study is based, and disseminate this information.

3.5 Ethical Consideration

Ethical norms were strictly adhered to throughout this experiment according to SDU University rules on research with human beings. All participants gave full informed consent before collection of any data. Each instructor was given a thorough information sheet and consent form (see Appendix A) which detailed the reasons for undertaking the study, that it was fully voluntary, that they may opt out at any time without penalty and how their privacy would be preserved.

All pseudonyms are used in this article to ensure full anonymity. Any identifying features, such as the names of particular schools, the exact neighbourhoods or identifiable landmarks, were vague or omitted. All digital information, including audio recordings, typed transcripts and written narratives, was saved securely on password protected devices that only the lead researcher and the thesis advisor have access to.

The ethical aspects of language translation were also studied with considerable care. The interviews were carefully translated from Russian and Kazakh, so that the genuine meanings of the teachers were not misrepresented. The internal transcripts were also studded with extensive comments and explanatory clarifications where a precise translation seemed impossible or could alter the original intention of the speaker. The only way to make sure that no one's words or experiences were misread was to keep the entire process entirely transparent.

CHAPTER 4

Results

This chapter shows the findings of the thematic analysis and is divided into four key topics that arose from the data. Representative quotations from participants illustrate each theme. The results are discussed in the context of the theoretical frameworks and empirical literature reviewed in Chapter 2.

4.1 Theme 1: The Digital Skills and Self-Efficacy Gap

A significant finding was a substantial "self-efficacy gap" among the individuals. This difference was not a question of age or experience but appeared to be a combination of circumstantial factors, previous experiences of success and a leaning for technology.

High Confidence ("Pionerrs").

Two teachers were found to have very high levels of confidence and activity with digital tools. Teacher E is a young teacher teaching in a Private rural school and gave her confidence 10 out of 10. "I'm always ready for everything," she says, and actively seeks out the "on-trend" equipment herself. I'm always looking for "on trend" tools myself. "I don't wait for training," she said. "If I see something interesting on social media or hear about it from a colleague, I try it myself first and then bring it to class." Teacher F, a professional teacher in her late 30s who teaches in a fully online private setting, scored herself an 8/10. She explained that she is a "facilitator" rather than a typical teacher, and defined her digital classroom as a place where "technology is just the air we breathe."

These situations are in line with Bandura's (1986) Social Cognitive Theory, which states that "mastery experiences" are the most effective source of self-efficacy. Mastery experiences are direct, successful experiences in the activity. But some teachers were less sure of their own

IT skills. Teacher B has been teaching in a public school for five years and scored herself a five out of 10. “I just use what I already know,” she replied. “I often have students who know more than I do,” she said. Teacher D has been teaching for seven or eight years. She gave herself a five as well, adding she “sticks to what works.” Among the teachers, younger one Teacher A during the interview rated herself at six out of ten. During the interview, when asked why it was so low, she gave an explanation: *“I’m good at working with Canva and Kahoot because I’ve been using them for a long time. If you ask me to use new digital tools, I will refuse. The reason is that I need a teacher to explain to me and then guide me on how to use it.”* This is a common trend that confidence is considered as a specific tool. Some teachers can be experts with PowerPoint but with Padlet, they will be beginners. Bandura (1986) argued that she misses master level experience with a new tool. The solution of the problem is not having special training to improve “digital literacy”, because she already had them. The true strategy is more specific hands-on activities to better practice with tools will be used in the classroom.

Additionally, the most confident two teachers (teacher E and teacher F) who work in the private school and also online, have full set settings with stable internet, technology support. They like experimenting with unfamiliar tools without fear. On the other hand, teachers who have low level confidence (teacher B and teacher D) work in governmental type schools and in rural schools, unfortunately, they have low internet connection and technology support is limited. By looking at the differences, it clearly shows that self-confidence is tightly connected with the working environment. With high level support, a teacher with any level of digital competence easily gets improvement. But if support is poor, teachers will be skilled with basic tools instead of advanced ones.

This pattern of moderate self-assessment agrees with the results of Basilotta-Gómez-Pablos et al. (2022) who found that most higher education professors perceived their digital ability as low or medium. Research increasingly reveals that the digital abilities of students are often superficial and less critical than teachers assume, however Teacher B's opinion that her kids are more tech-savvy than she is is prevalent in the literature on digital natives and immigrants (Zhao et al., 2021).

Discussion

The self-efficacy gap found in this study supports the notion that confidence in digital teaching is built through opportunities for successful practice and a supportive environment rather than as a natural result of experience or age. Gudmundsdottir and Hatlevik (2018) found that attitudes to ICT and prior experience are a better predictor of competence than demographic characteristics alone. The absence of excellent mastery experiences, time and institutional constraints appear to have caused teachers such as Teacher B and Teacher D to develop a careful, risk-averse attitude to digital innovation.

4.2 Theme 2: Barriers of First and Second Order

Teachers highlighted several barriers, which are a mix of external (first-order) and internal (second-order) barriers that prevented their effective integration of digital resources.

First Order Barriers (Facilities)

The most commonly mentioned issues were hardware, connectivity and technical aid, especially for teachers in state and rural universities. Teacher D said there were frequent '*disruptions*' owing to poor internet and failed systems. "*The crashing keeps interrupting the lesson. This is really frustrating.*"

The extremely confident instructor E said that “*not all classrooms have an interactive board*” hence she had to utilise her personal laptop to provide courses improved by technology. Teacher C said that “*On site there’s no tech help. If something goes wrong it’s broken for weeks.*” These findings are consistent with the continued “digital divide” as a major hurdle in the context of Kazakhstan, as noted by Kassymova et al. (2023). National infrastructure is developing — Starlink is now in 1,700 distant schools — but the reality in the classroom can be a long way from policy statements. This is consistent with the critical position of Selwyn (2011) who argues that the adoption of technology is mediated by local material conditions that are often disregarded by policy .

Second Order Barriers (psychological and institutional)

Teachers identified infrastructure as well as a range of psychological and institutional impediments. For all participants the most frequently highlighted barrier was time pressure.

Teacher F said bluntly, “*The biggest barrier is time. I have a heavy teaching load ,grading, lesson planning, and getting those extra hours to learn a new app? It’s a luxury I don’t have.*”

Teacher C said that, “*I need time to play around with new apps and test them out. Therefore, I use the old ones most of the time.*”

Another source of stress was the learning curve of rapidly changing technology. Teacher B said she felt overwhelmed: “*Every time, there’s definitely a new instrument. I don’t even know where to start.*” This view is consistent with the idea of 'digital burnout' and the anxiety related to the obligation to keep up with technological skills.

Digital competences are shaped by institutional attitudes. As Teacher C said, “Schools will not be able to hold any examination without technology support.” The education system’s frame of reference, that is exam based, stifles innovation in pedagogy (as opposed to high-

stakes). Institutionally, there are few ‘incentives’ for teachers to spend time developing their digital competence as this is not formally embedded in the curriculum and the assessment framework. This finding is consistent with the institutional barriers identified by Bui (2022) and Eryansyah, and Erlina (2023) that the emphasis on traditional examination-based teaching adversely affects innovative approaches to teaching.

Discussion

The interplay between first and second order barriers is complicated and self-reinforcing. If instructors don’t have the right infrastructure, they may not be as interested in using technology in the classroom. This can lead to a lack of self-efficacy or confidence in their abilities to use technology, and so reduce the chance of their engagement in professional development or training for new technology. Teachers in both rich and poor schools often don’t make full use of the technology they have, either because they are pressured for time or because they don’t have the proper assistance from their institutions. The findings provide strong support for the “Black Box” theory of Facer and Selwyn (2021) which explores how the process of using a technology is much more complex than simply putting it in the classroom. The whole process is based on the consideration of the cognitive load of teachers, stress level and the culture of the institution where they work.

All participated teachers in this study did not experience any first-order and second-order barriers as different issues. Instead, they perceived the problems as self-supporting traps. As teacher C said: *“If in the middle of the lesson the internet starts crashing which happens regularly, I feel awkward and embraced in front of the pupils. After this kind of issue, I tried to not plan anything related to the internet. In lessons I use just PowerPoint as usual. Even school administration noticed the core problem, they did not see the importance of the speed of*

connection. Why would they fix it? Because they think it is not a big deal.” Here the problem shows reinforcement of the cycle of first-order and second-order barriers. Firstly, technology breakdown (first-order). Secondly, the teacher's psychological state during the accident (second-order). Thirdly, after the incident the teacher tries to avoid using the connection. Lastly, school sees low demands and refuses to solve the problem. For breaking the cycle, it necessitates simultaneous action on both levels. The funding from the state should include new equipment plus a coach to teach and plus extra time to practice. Teacher F noted: *“You can’t teach someone to swim by just giving them books about swimming. Before the actual lesson, you must get them in the water and the water must be safe.”*

4.3 Theme 3: Changes in Teaching Practice

Teachers encounter many difficulties every day but are inventive in using digital resources for teaching EFL organisation. Here are three areas to watch out for: student motivation, time saving and child collaboration. Fun, competitive review tools are such a hit.

Gamification and Review

Teacher C uses Bilimland and Wordwall for grammar drills, teacher A uses Kahoot for unit reviews. Teacher E uses Quizzes and Wordwall to create a friendly competition and she says, *“They love the competition. They don’t even know they’re learning.”*

Time Savings and Customisation

Technology is helping teachers deal with their heavy workload. Teacher D uses Google Forms for quick quizzes, and she loves that it automatically grades, which saves her a tonne of time. For larger projects, Teacher F uses Miro and Canva so students can work together at their own pace, in real time: *“With Miro I can create a board and students work in teams. It’s much more dynamic than a worksheet”.*

The rise of AI

Teacher E is already using AI as a personal teaching assistant, to create exercises, provide quick writing feedback and personalise lessons. *“It allows me to make materials more quickly so I have more time to actually talk to students,”* she says. A good example of this pragmatic approach to AI is the successful 2025 Orleu-UNESCO training initiative that attracted teachers by focusing on tools they could use right away (Kuttybayeva & Doğan, 2026).

Discussion

These practices show that teachers are adopting Multimodal Literacy (Johnson et al., 2016) and Universal Design for Learning (UDL). They’re not just putting text on screens, they’re creating interactive student-centered environments. They play games, use shared whiteboards and have a strong intuitive understanding of the main TPACK principle that technology should be used to support a particular teaching goal. But there is a clear trend – the most popular tools (for example Kahoot and Wordwall) require very little technical skill or change to lessons. Only Teacher F used complex and open-ended platforms such as Miro. She is lucky to be in a totally digital universe and to have time to play. This is consistent with Bui (2022) who found that basic, teacher-led use of technology is still far more common than deep, student-driven discovery. The teachers in this study have the solutions for what they would do if barriers were removed. Teacher F already uses digital tools such as Miro in the business English classes for collaborative assignments in the virtual classroom and as homework. Teacher E also uses some tool to encourage students to study. She uses AI to generate short reading passages for reading by considering their interest, level of language, and skill level.

4.4 Theme 4: Institutions’ Support and Professional Development Needs

One thing teachers agreed on: They want hands-on, ongoing PD that they can use in their classrooms. Beyond the “One-Off” Seminar Educators tire of abstract, heavy theory workshops.

Teacher C said, *“It is only practice and not theory that can make us competent with tech.”*

“Training”, said Teacher A, is mostly a *“one-time thing where someone talks at us for two hours and we never hear about it again.”* This frustration is consistent with a long-standing finding in educational research, that is, single seminars rarely lead to meaningful improvements in classroom practice (Darling-Hammond et al., 2017).

The Need for Useful On-Site Coaching

Instructors are looking for specific training on the exact tools and internet speeds they have on campus, not general IT presentations. Teacher A suggested that there be a tech mentor for each department in the school. Teacher E succinctly put this preference for the hands-on: *“Don’t just give me a list of apps. I’ll try them out, see how it works in my classroom.”*

Impact of Peer Support Every Day

When the tech goes wrong, instructors don’t call an IT help line, they call each other. Teacher B leans on the younger teammates, *“I just ask one of the younger teachers. Often they have a trick or a shortcut up their sleeve.”* At Teacher E’s school there is a very active peer network, *“We have a WhatsApp group where we send links and ideas, if someone finds a nice tool we all test it.”*

The Big Picture on Policies

The teachers believe that personal effort is not enough, and there is a need to reform the school infrastructure and the official norms. Teacher C said that *“administrative support is dependent on curriculum”* and Teacher B said that *“only a good network and support can make tech work.”*

Discussion

The evidence presented strongly suggests that good tech training can't be a top-down mandate and can't be one size fits all. To be sustainable, PD needs to be collaborative, distributed over time, and adaptive to the local realities of schools (Instefjord & Munthe, 2017). Schools could, for example, set up Professional Learning Communities (PLCs), or offer incentives for “near-peer mentoring”, where a younger teacher with better digital skills acts as a coach to senior teachers – a very effective and economical technique. The Orleu-UNESCO AI training programme in 2025 is a striking real-world example of this. It was not successful in Kazakhstan due to some complicated theory but due to practical, bilingual and immediately applied classroom techniques (Kuttybayeva & Doğan, 2026).

Teachers not only criticized current PD, but also they proposed visible alternatives. Here are four specific suggestions that were made throughout responses from interviewers:

1. Training in own facilities, not outside. *“When we go to training centres or seminars, we use their fast internet connection and new computers. But, when we come back to our school, we cannot practice or even apply what we have learned. Train us in our own workplace with our equipment.”* (Teacher D)
2. Long-term, not one off. *“For us one-two sessions are useless. If you check me after weeks, you will see that I'm not using the tool. Instead, help me with challenges that happen while using it.”* (Teacher A)
3. Peer teaching instead coach teaching. *“One of the best training I ever received was from my college at school. She was not an ‘expert’. She shared with me three digital tools which she uses in the classroom. Later she taught me. I felt comfortable asking simple dumb questions.”* (Teacher B)

4. Specific tools not general ones. *“There is no need to teach me ‘ICT skills’. Instead, teach me how to use Wordwall for vocabulary tasks. Teach me the ways of using Google Forms for listening tests. I need to learn about digital tools which are directly connected to my English classroom needs.”* (Teacher C)

These four recommendations match accurately with the effective PD literature (Darling-Hammond et al. 2017): ongoing, focused on content, active, collaborative, and also aligned with school’s goals. The understanding of what, how works is present already in the teachers. The gap is in practice.

4.5 Connecting Findings with Frameworks and Literature

The three themes are not separate concepts. They portray an overall picture of digital competence as a systematic, rather than individual phenomenon.

Connections to TPACK.

The level of confidence gap (Theme 1) is especially important when teachers have Technological Knowledge (TK) and Content Knowledge (CK) but lack of the Pedagogical Knowledge (PK) to Integrate with the other two. As an example, teacher B knows how to use PowerPoint (TK) and English grammar (CK). But she does not know how to make a subject session where students teach each other grammar topics with rules by using PowerPoint. This kind of problem requires TPACK, which she never had a chance to develop. It needs PD that clearly demonstrates the links to how technology will support pedagogy for specific content.

DigCompEdu links.

In DigCompEdu, six competence areas can provide a helpful evaluation. The teachers in this study scored quite well on Area 2 (Digital Resources) - they know how to find and can use ready content. But they scored much lower on Area 3 (Teaching and Learning) and Area 4

(Assessment). This uneven outline matches with international findings (Basilotta-Gomez-Pablos et al., 2022). They suggest that PD should be scale specific and not generic.

Links to the interrelated model of Rahimi.

Rahimi (2024) pointed out that personal factors (attitudes, experience) and school-level factors (connection, access training) can independently correlate with digital competence. Teacher E's confidence is not just her age and an open, positive mindset, but also the main reason is the school environment and willingness to experiment. The reason for the poor confidence of teacher D's is not so simple, because she has eight years of experience. Instead the core of the problem is the school's poor internet connection and there is no technology assistance.

This study demonstrates that level of confidence in digital education is not a trait but an evolving person-environment interaction. Bandura (1986) describes that master level of experiences as the most effective form of self-confidence. However, to gain effective experience is only possible if the school environment is ready. Because of poor internet connection teachers can not gain experience and they will develop fear of trying new digital tools. Therefore, future investigation on teacher's digital competence should start from examination of environment accessibility and also, additionally teacher's attitudes and skills, as a factor that can influence confidence and practice.

CHAPTER 5

Conclusion

5.1 Results Summary

This qualitative research is designed to examine the viewpoint, obstacles, and ways of working of Teaching- English-as-a-Foreign- Language (EFL) teachers in secondary schools in Kazakhstan by examining their digital skills. Using three research questions to analyse data from six teachers through interviews and written reflections to determine the major themes in their responses led to four key findings being identified in the research.

First, in terms of perceptions of proficiency and self-efficacy, the study found a large gap between “Pioneers,” teachers with high confidence who are proactive and self-directed in their learning, and “Cautious Users,” teachers who perceive their competence to be limited and who are daunted by the rapidity of technological change. This discrepancy was less a result of age or experience per se than the accumulation of good mastery experiences and availability of contextual support.

Secondly, the study showed different barriers to digital integration, consistent with the categorisation of first-order (infrastructural) and second-order (psychological and institutional) barriers by Ertmer (1999). Ongoing gaps in infrastructure, especially in rural and state school settings, continue to impede teachers’ ability to use technology consistently and reliably. At the same time, time pressure, a steep learning curve and lack of institutional encouragement are key second order barriers that reduce teachers’ willingness to explore and develop.

Third, the study described many changing classroom methods, such as gamified revision and formative assessment, collaborative, project-based learning with Miro and Canva, and the use of an online collaboration wall. The statistics demonstrate that while most teachers are

actively adopting digital technologies to boost engagement and efficiency, teacher-centered, presentational applications are still more prevalent than totally student-centered, participatory pedagogies. This pattern is consistent with the international patterns presented by Bui (2022).

Finally, educators placed a high priority on the need for professional growth through clear and consistent professional development and support activities. They preferred that training take place in a real-world setting with ongoing, practice-oriented training rather than theory-intensive, off-the-shelf training. Peer support and near-peer mentorship were utilized as effective ways to facilitate troubleshooting and learning in addition to providing evidence of how formal Professional Learning Communities (PLCs) have the potential to be a sustainable manner in which to provide continuous professional development.

5.2 Study Limitations

Despite the range of insights offered by the study, there are a number of limitations to consider.

First, the sample size of six participants is appropriate for an in-depth qualitative investigation, but limits the generalizability of the results. The experiences reported here may not be representative of all secondary EFL teachers in Kazakhstan, especially those in districts outside of Almaty, or in more remote rural locations not included in the sample.

Second, the data were collected through subjective self-reporting per se and are prone to social desirability bias. Participants may have over- or under-estimated their ability at problem solving. In future research, classroom observations or analysis of digital artefacts (e.g., lesson plans, samples of students' work) combined with self-report data could provide a more objective assessment of actual practice.

Third, potential language and translation issues in the interpretation. Interviews were translated from Russian and Kazakh into English for study. Some cultural and language aspects

may have been lost or changed in the translation process but all effort was made to keep the conceptual sense.

Fourth, this survey was cross-sectional; perceptions were measured at one time point (early 2026). Research into the development of teachers' digital competence and attitudes over time would require a longitudinal design, in the context of ongoing training, policy change and the future evolution of AI technology.

Lastly, the study was restricted to high school EFL teachers. It is useful to explore the experiences of primary level teachers, other subject instructors or teachers at private international schools with very different levels of resources, as they can be extremely different and deserve to be explored independently.

5.3 Conclusions

The digital competence of secondary school EFL teachers in Kazakhstan in 2026 is characterised by a critical tension between national strategic ambition and the reality on the ground. "We have a strong policy push in the 'Year of Digitalisation and AI' and there is a lot of momentum to make a change. But teacher self-efficacy is uneven and significantly mediated by local contexts of infrastructure, time and institutional support, as this study has shown.

At the end of the day, the transformation from being a "PowerPoint presenter" to being a "Pioneer" of the digital pedagogy requires more than hardware and software. It requires a fundamental investment in people – in the collaborative professional cultures, the practice-oriented preparation, and the institutional recognition that allow teachers to develop the confidence, competence, and critical judgement necessary to work effectively in the digital age. In this way, Kazakhstan can prepare its EFL teachers to use digital tools as well as create them in

the service of more engaging, equitable and successful language learning by focusing on human relationships and emphasising “pedagogy over technology”.

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Appendix A

Subject of the Appendix



Consent Form for students' participation in a research study

Study Title: Digital Competence of Secondary School EFL Teachers: Perceptions, Challenges, and Practices

Researcher: Nazerke Bekaidar

Email: 241302004@sdu.edu.kz

Institution: SDU University, Department of Language Education , School of Education and Humanities

Degree Program: Master of Arts in Teaching English as a Foreign Language (TEFL)

Dear Participant,

You are invited to participate in a master's thesis study. Before deciding to participate in this study, please read the following information carefully.

Research Purpose and Procedures.

This interview should take approximately 30-45 minutes to complete. Also, it will be conducted in your preferred language. And you have another choice is to submit written answers to the interview questions.

Possible risks and discomfort related to participation in this research

For participation, minimal risks are associated in this study. One of the risks may include time for completing the interview. You have the opportunity to refuse to answer any questions or to stop the interview at any time.

Possible advantages of participation

You will create a better understanding of what EFL teachers in Kazakhstan need for developing their digital competency. And also, you will get more information about tools which you can use in the classroom.

Confidentiality & Privacy.

Within reason, any personal information obtained as a result of participation will be kept confidential to the greatest extent possible. However, total confidentiality cannot be assured.

Contacts for additional information : Nazerke Bekaidar, 241302004@sdu.edu.kz

Thesis Advisor: Saule Tulepova

Voluntary Nature of the Study.

It is strictly voluntary as to whether to participate in this study or not. You have a right to withdraw your agreement to participate at any time.

Estimated duration of the research in four weeks.

Statement of Consent.

I, _____, agree to participate in this study voluntarily. I have been made aware of the research purpose and objectives and clearly understand what is expected from me.

I know that it is voluntary to participate in this study and I have complete freedom to withdraw my consent at any time without providing any reasons and in this case there will be no negative consequences to me.

I understand that any personal information obtained in this study will be kept confidential.

Signature: _____ Date: _____

Researcher:

Signature: _____ Date: _____

Appendix B

Semi-Structured Interview Protocol:

The semi-structured interview protocol presented in this appendix describes the process of semi-structured interviews with each of the six EFL teachers who took part in this study. The questions in this interview protocol were purposefully developed to elicit rich detailed stories about teachers' perceptions of digital competence, classroom practices, barriers faced, and the kind of professional development required. All interviews were carried out in the participant's preferred language, either English, Russian, or Kazakh. A flexible protocol provided both open-ended interview questions, as well as additional probes and follow-up clarification questions, to allow the teacher to reflect on their experiences in depth and elaborate further.

1. What is your teaching environment and your digital setup at school?
2. What digital tools do you use regularly? Tell me about a recent lesson that had a big tech component.
3. Where did you learn your digital skills? Think of a time when you weren't sure about a tool – what happened?
4. How confident are you (1-10) with integrating new tools? What are the biggest barriers you have (technical, time, support)?
5. What kind of support or training would be most useful for you and your colleagues?
6. Any advice to a teacher who feels overwhelmed by the speed of change in technology?

Probes (as required) "Tell me about that." "Like what?"