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**Language Teachers Use/Non-use of ICT in
teaching and learning in Kazakhstan in a
single University**

by

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A thesis submitted in fulfilment of the requirements for the
degree of
Doctor of Philosophy in Education

University of Warwick, Department of Education

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Declaration

I certify that this thesis has not been published and presented in any previous application for any degree in any other university. The data generation and data analysis were carried out by the author. I, without any doubt, take full responsibility in the originality of the materials included in this work as the author.

Akmarzhan Nogaibayeva

Date 22/06/2021

Acknowledgements

“Seeking knowledge is mandatory for every Muslim” is one of my favourite sayings of Prophet Muhammad (PBUH). Therefore, an opportunity to improve the ability for people to learn, no matter the topic, is to me a holy undertaking.

On this valuable pathway, I owe thanks to many people who have generously given their support, time and knowledge during my doctoral research writing. For the knowledge and experience that I have gained throughout my life, I thank my parents – Almyrza Nogaibay and Patyma Ali for their endless support. Thank you for giving me the opportunity to pursue my goals.

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I dedicate my work to my little princess Safiya Yerbolkyzy. I am sorry for being away from you for such a long time, but you have always been in my thoughts and prayers. You are a true bounty and an honour granted by Allah. May He guide and help you to find pure truth, knowledge about life since your name resembles such a meaning, purity.

Finally, thank you to my fellow countrymen and friends for all your support while we were all far from our home. It felt as if we were a small family of our own.

Abstract

This research explores why language teachers use ICT in their teaching and learning. This is a case study in one university in Almaty, Kazakhstan. The study involved the use of quantitative and qualitative methods: a questionnaire survey of teachers (n=111); interviews (n= 21) and observations (n=7 lessons). The study was carried out between 2017 – 2021, with data collection taking place in 2019.

The case study explored use and perceptions of ICT. Three different types of ICT users were identified. *Low level users* found the use of ICT difficult and limited to use to personal interests. *Middle level users* felt they had reasonable skills and saw themselves as confident in using ICT in teaching. They tended to use ICT for routine practices, administrative purposes and lesson preparation. They might encourage students' use of mobile phones in the lessons they tended not to promote the use of ICT outside lessons. *High level users* were confident in their ICT skills and in addition to routine use were looking for more creative use of ICT in and out of the lesson. They had strong beliefs around the impact of ICT use and had strategies to get around the limitation of access.

Findings from different sets of data showed that in general teachers had positive attitudes towards ICT use. Teachers' personal feeling about ICT were important but were not fixed; they could change because of the environment. Encouragers of ICT use were beliefs in ICT's impact on students' learning and engagement; support from managers; departmental evaluation, and ICT discourse. Discouragers were linked to the lack of ICT resources, limited support and too few training opportunities.

The study argues that teachers' perceptions need to be analysed in a holistic way and a model for understanding ICT use is provided. This model draws on ecological frameworks which combine personal characteristics, institutional arrangements and wider environment. This research contributed to an under researched area language teachers ICT use perceptions in HE in the context of Kazakhstan.

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Glossary

Abbreviations	The meanings of abbreviations
ICT	Information Communication Technology
HE	Higher Education
HEIs	Higher Education Institutions
EFL	English as a Foreign Language
MFL	Modern Foreign Languages
USSR	Union of Soviet Socialist Republics
MoES	Ministry of Education and Science
BP	Bologna Process
CPD	Continuous Professional Development
IWB	Interactive White Board
L2	Second Language
CAI	Computer-Assisted Instruction
CALL	Computer Assisted Language Learning
CMC	Computer-Mediated Communication
SPSS	Statistical Package for the Social Sciences
NVivo	Qualitative analysis software
VR	Virtual Reality
NGO	Non-Governmental Organisation
Orleu	National Center for Professional Development

Chapter 1: Introduction

Purpose and research question

The purpose of this study is to explore the use of Information Communication Technologies (ICT) by language teachers in Higher Education (HE) in Kazakhstan. This will involve collecting data on language teachers' use of ICT in their teaching at a case study university. I also investigate the teachers' perceptions of constraints and opportunities that come with the use of ICT. I also develop a theoretical framework to explain teachers' decision-making regarding the use of ICT i.e., how teachers use ICT and how they use ICT in their teaching.

The main research question of this study is 'Why do language teachers use or not use ICT in a higher education setting?' The following sub questions guide the study design.

RQ1. To what extent do language teachers use ICT in teaching in one university in Kazakhstan?

RQ2. What do language teachers see as the benefit of using ICT and what helps them to use it?

RQ3. What constraints do language teachers face in using ICT?

RQ4. What do language teachers see as the consequences of using ICT?

My study is a single case study on the use of ICT in the language faculty of a university in Kazakhstan. The site is representative of a public university with a long history and tradition.

While this is a single case study looking at the phenomenon of ICT, it will be illustrated in three sub-contexts i.e., the teaching of English, Kazakh, Russian in the School of languages.

This study has a mixed methods design that combines two methods (quantitative and qualitative). The research objectives require data collection from multiple ways: questionnaires, interviews, and observations of classroom practice. It aims to describe ICT integration and the opportunities this brings, as well as the difficulties that obstruct ICT use in practice. The study consists of two stages. The first stage involved distributing a questionnaire to 300 language

teachers from the three different departments in the target university. Having collected 111 completed questionnaires, I had a general view of their perceptions on the use of ICT and identified common enablers and constraints of ICT use. In the second stage, I observed seven classes: two English classes, three Kazakh classes and two Russian classes. This gave me a valuable insight into what was really happening in classrooms rather than basing my understanding from questionnaire results, which can at times be less accurate. The second stage involved interviewing: 20 teachers of the three different languages (roughly proportioned in terms of gender, language taught and interest in ICT use); three heads of the departments; an Information Technology (IT) technology support professional; and the dean of the faculty.

Context for the study

Kazakhstan, a country with the size of Western Europe, was a Republic of the Soviet Union for more than 50 years before gaining formal independence in December 1991, making it a relatively new nation. It is one of the five independent republics located in Central Asia and has a population over 18 million.

The country is committed to developing higher education. There are currently 128 higher education institutions with a half of a million university students and over forty thousand faculty staff in the country. This current study is about language teachers' ICT use or non-use in HE in one of largest universities in Kazakhstan. The university can be described as a long-established higher education institution, set up with research institutes and research centers. In the early 1990s, it was classified as a 'national' university by the government and awarded the status of an autonomous public institution. Today, the university has over 100 departments, more than 200 faculty members, and more than 20,000 students. The stated aim of the university is to prepare specialists in natural and humanities disciplines.

The Department of Philology and World Languages, where this study takes place, is one of the oldest faculties in the university. The faculty consists of six departments including: the

Department of Kazakh Linguistics; the Department of Kazakh Literature and Literary Theory; the Department of Russian Philology and World Literature; the Department of General Linguistics and European Languages; and the Department of Foreign Languages. However, the Department of Foreign Languages teaches world languages to students in other faculties of the university which shows the varied nature of their work.

The faculty has two aims: one is to prepare qualified teachers with specialisms in language and literature, including Kazakh language and literature, Russian language, and literature, as well as foreign languages (very often English, though they do teach other languages). The faculty also has wider responsibilities for teaching general courses in Kazakh, Russian and English. Teachers of Kazakh and Russian teach specialists in general courses; however, teachers of English have their work divided between English literature and general courses.

Departures from the Soviet system

The study takes place at a time of reform and change in HE in Kazakhstan. To understand the context of Kazakhstan's HE, it is important to consider attempts to reform the system over the past two decades. Until 1991, Kazakhstan was organised with other Soviet Union Republics into one education community. During the Soviet period, the first HE institutions in Kazakhstan were developed, and by 1975 there were 47 universities. The stated goals of these Higher Education Institutions (HEIs) were ideological, i.e. to serve the Soviet Union objectives (universal literacy, commitment to the party ideology), and to educate specialists to work in key industries, including oil and gas (Ahn et al., 2018). In 1959, the Kazakhstan Ministry of Education and Science (MoES) was formed.

By the end of the Soviet period, the nascent Kazakh government inherited 55 HEIs. These came with a legacy described by Rudista (2004) as a system which was fundamentally guided by political ideology; isolated from international trends and practices; poorly financed and slow to innovate; and emphasised on specialisations, linked to the Soviet economy. Kazakhstan further

experienced unstable economic conditions after separation from the Soviet Union. For example, Gross Domestic Product fell between the years of 1991-1996 (World Bank, 2005) and fell again with the global economic downturn in 2005.

This economic background led to a transformation of the economy which was largely successful and based on exploitation of natural resources. Alongside of which, Kazakhstan began constructing new socio-cultural establishments, privileging the titular Kazakh language as the official language.

Starting from the 1990s, the Kazakh government began administering education reforms under the Law on Education (1992) and the Law on HE (1993). Private HEIs were allowed (OECD, 2007); and in 2015 there was an even split of enrollment between public and private universities (MoES, 2015). However, at this stage, the centralized control that had existed under the Soviet regime was kept (Sarinzhipov, 2013). After introducing private HEIs, eight universities were given the status of a National University. With the goal of increasing student attainment as well as gaining degree recognition, the Kazakh government signed the Convention of the Bologna Process (BP) so as to ‘join the world education community’ as stated in the State Education programme of Development (2011-2020). This led to membership of the European Higher Education Association. Being accepted in BP required large scale change to higher education. This meant the introduction of a robust system of accreditation, allowing transferability across institutions. It also meant the need to update the curriculum by changing the length of programmes and exercising a greater degree of autonomy for universities within an independent financial and legal framework.

The BP has had a huge impact on KE system, leading to the development of the “State Programme of Education Development in the RoK for 2011-2020” (MoES, 2010). This has had the goal of creating a competitive environment to support sustainable human and economic growth through access to quality education. In addition to this programme, several laws have

been passed with an intention of HE reform. One of the goals of the MoES plan (2010) was to increase the research output in line with international standards (Law on Education, 2007; Law 'On Science', 2011). However, in spite of these reforms and investment in the system, HEI were characterised by poor access to resources and reduced research infrastructure.

Problems have continued to exist regarding autonomy in HEIs. As the government remained the main body with centralized control over a significant portion of institutional governance, there was a need for more autonomy for HEIs. This autonomy would give HEIs more scope to make decisions related to high level administrative processes (procedural autonomy) and decisions related to academic affairs (substantive autonomy). Although the government's intention was to loosen the system of control, this was slow to happen (Ahn et al., 2018). Being faced with organizational change after being accustomed to central control was not easy. Raza (2009) concluded in 2009 that the tertiary sector of Kazakhstan had not changed significantly from the Soviet period. Even though the teaching staff had a certain degree of freedom in curriculum design and in using whatever available resources there were in line with teaching methods, reforms have taken place within the frame of a standardized curriculum. The overall picture was well put by Mouraviev (2013).

It was stated that the way that the government approached the curriculum formation was as follows. The government would select a 'leading' university for each degree programme and assign the responsibility to design the curriculum in consultation with other HEIs (Mouraviev, 2013). In reality, little or no consultation took place, and the curriculum for each major was heavily influenced by what a 'leading' university actually taught or preferred to teach.

According to Ahn (2018), research output was affected by the centralized control of the MoES and academic workload constraints. Sarinzhapov (2013) also reported that the HEIs, whether private or not, had to meet the requirements of the MoES in order to maintain their institutional licenses. Heynemann (2010) further noted that MoES faced difficulties to track HE reforms

agenda. For example, the “proliferation of actions, the plethora of agencies and committees and the frequent changes in the related regulations and processes are confusing and overburdening HE stakeholders” (OECD, 2007, p. 117–118).

Nevertheless, change has happened and is continuing to happen. The government has continued implementing actions related to BP including the development of necessary infrastructure, making arrangements for greater autonomy, and introducing reform policies. Implementing the BP agenda has had an impact with HEIs moving away from their Soviet inheritance. However, the lack of support and involvement both internally (among faculty, lower-level admin, students) and externally (from business, parents, wider society) has meant there is still a legacy in the day-to-day practices. This will be further discussed in the later part of the thesis.

Technology and reform

A systematic reform policy for education began in 1997 (the Ministry of Education and Science, 1997). Consequently, Kazakhstan’s education system experienced change, and one aspect of transformation has been the integration of ICT at all levels of education. Policy makers, at the government level, have promoted ICT and ICT literacy by introducing new technologies as outlined in the programmes for Education Development for the years between 2001-2020 (Damitov et al., 2009; The Ministry of Education, 2010). The first phase for this promotion of technology was developed with the Secondary Education (1997-2002) plan which introduced computer literacy and set about equipping primary and secondary schools with technology (MoE and Science, 1997). The Concept of ‘Informatisation’ [sic] of the Education System was adopted in 2001 for the period of 2002-2004 with the goal of unifying educational information with further development into the world educational space (MoE and science, 2001). The State Programme for the Development of Education in Kazakhstan between 2005-2010 continued in the same vein by aiming to modernize the education system by improving access to electronic

resources. At this stage, e-textbooks were implemented for some subjects and the computer ratio per pupil reached 1: 20 (MoES, 2004).

In December 2010, the government introduced the State Programme for Development of Education between 2011-2020 with the purpose of increasing the competitiveness of education and human capital development by providing access to quality education. One of the aims here was to ensure equal access for all participants in the educational process to the ‘best educational resources and technologies. It was planned that all secondary schools would be provided with 100% access to broadband Internet by 2020 (Ministry of Education & Science of Kazakhstan, 2010). Thus, the introduction of technology has been linked to equity, modernization, and competitiveness. The results have not always been as hoped. In education as a whole, problems have always existed (Khalikova, 2013; Karimbayev et al., 2014; Kaskatayeva, 2014). However, little is known as to the exact reasons why and how ICT has been used in the tertiary level of education, and among language teachers, there is very little, or no research of ICT use. This research is addressing an important question, to uncover how ICT is integrated in the university sector by Kazakh, English and Russian language teachers.

Language teaching in Kazakhstan

Kazakhstan is a multilingual state, and the government has promoted the project “Trinity of Languages” (Aksholakova and Ismailova, 2013). The aim here is to promote Kazakh as a state language, Russian as a language of an interethnic communication, and English as a language of the global economy integration (Pavlenko 2008; Smagulova 2008). Therefore, in higher education, most universities offer courses in three languages. There are usually three streams in any language faculty – English, Kazakh, and Russian. At university level, Kazakh and Russian subjects are compulsory subjects, so students from the Russian language department must take Kazakh, while students in the Kazakh language department must take Russian. All students from all departments are required to study English in their first and second year of study. However, in

order to understand the whole scale of the language transformation in Kazakhstan, the brief history of the language shift starting from the Soviet period is discussed.

During Soviet times, the Russian language was promoted as a lingua franca on the basis of a policy of active ethnic resettlement within the republic. Russian was popularized in multilingual contexts at the expense of other ethnic languages including Kazakh. As a consequence, Russian became mandatory in schools which led to closure of 700 Kazakh schools (Khazanov, 1995).

Due to this, children were effectively left to study in schools taught in the Russian language and in addition, preference for learning Russian increased as job opportunities were sometimes only open to Russian speakers in urban areas.

Even though Russian was not officially mentioned as the 'official' language in the USSR constitution, russification has had a huge impact, notwithstanding the principles of the Soviet Union Federation (equality of all nations, promotion of cultural materials through education). As a result of limited access to quality education, the Kazakh language became the 'kitchen' language with the domination of Russian, making the Russian language seen as a language of power, education and opportunities.

After gaining independence and the ensuing tension from within the Russian-speaking population, the status of the Kazakh language in relation to Russian became an important issue in identifying Kazakh ethnicity, tradition and culture. During this transition period, a law was passed in 1989 and the Kazakh language was given the status of official language, and Russian became the language of interethnic communications in 1996 (Everett-Heath, 2003). Despite official support from the government, the Kazakh language had not had the language resources to compete on an equal footing with the Russian language as there were several issues. For example, the deadline to make Kazakh as a state and official communication language was postponed several times (1195, 2010 and further) (Davé, 2007).

The establishment of the National Academy during the Soviet period ensured Russian was the language of politics, science, economics while Kazakh remained as a spoken domestic language. However, the promotion of Kazakh as an official language continued by adopting several programmes. This included the introduction of Russian only in office, service, and trade communications, as well as making Kazakh mandatory as a language of administration in schools and other education institutions Kazakh was also promoted in science, culture, and through mass media.

In order to further develop the language policy, a document on the state programme on languages was launched until 2000 which resulted in an increased role for the Kazakh language, and the development of textbooks in the Kazakh language. The second state programme was implemented for a period until 2009 which potentially supported the creation of the KAZ Test on the basis of TOEFL in its structure and components for different levels from elementary to advanced, as well as movie screening (translation).

In general, this programme intended to ensure the high level of awareness and preserve all the linguistic richness of various nations living in Kazakhstan as well as their ethnic cultures. One of the new aspects of the language policy was the project 'Language Trinity' (in Russian 'Триединство языков') which was based on the concept of multilingualism (Pavlenko, 2008). In this respect, Russian became as a means of interethnic groups communication, English as a means of international business communication, and Kazakh as an official language of the state.

Based on this programme, universities of Kazakhstan started implementing the Language Trinity policy by teaching in Kazakh, Russian and other foreign languages. Teaching the Kazakh language was introduced in primary schools and continued up to secondary schools. According to Smagulova (2008), the preservation of an equal status for Russian and satisfying the right of the Russian speaking community was considered as an act of preventing language and ethnic

conflicts within the country. Promoting learning English and other foreign languages was one of the primary goals of National programme.

However, in the last two decades, the recognition of English has increased in Kazakhstan as it has been seen as a language of opportunity at an individual level and a language of development at a national level. According to Zhetpisbayeva et al. (2015), the implementation of multilingual education has been successful at secondary schools including Kazakh-Turkish lyceum and Nazarbayev Intellectual schools. Zhetpisbayeva et al. (2016) even reported an experimental programme that introduced the English language as early as grade two. Nevertheless, this demonstrates the distinctive backdrop of language teaching and learning in Kazakhstan, and thus sets the background to the study at hand.

Significance of the study

This study is significant for several reasons as it provides a contextual understanding to a rapidly developing multilingual system and unresearched area by explaining it with a new model.

Context

A lot of the research in the field of language that looks into teachers' ICT use, has so far, concentrated on EFL teaching in Western countries and in particular developing countries including Saudi Arabia. However, there is a lack of knowledge on this topic in the context of Kazakhstan. Hence, this study intends to fill the gap in the research by providing a critical commentary on the use of ICT by Kazakh, English and Russian teachers in a single university. The republic of Kazakhstan is a fascinating context in which to study the take-up of ICT among the teaching of three languages due to its multilingual environment. Furthermore, the study is set in a new nation which gained independence two decades ago after the collapse of the Soviet Union and has experienced significant changes in all aspects of education system since then. It is a unique country which is re-negotiating their relationships with bordering neighbors at the same

time as undergoing economic reform. The challenges faced by the education system and the problems of language teachers in relation to ICT use and the enabling and disabling factors are well covered but not in this particular context, or in the context of language teaching, and it is not well theorized. In this regard, this research will be very helpful for future planners and policy makers to assist the use of ICT by language teachers, in particular at the university level. The project aims to contribute to the literature on ICT implementation by providing a case study in a previously unresearched context.

Theoretical framework

The study draws attention to the wider system in which choices to use ICT are made. I present a new framework to look at the use of ICT in language teaching and learning. This is an adaption of an ecological framework, drawing on Bronfenbrenner`s (1979) ecosystem, to take into consideration local conditions in a higher education setting in Kazakhstan while taking into account the wider context. This framework has the potential for wider use in the academic community.

Summary

This chapter has covered:

- The purpose of the research and the research questions which highlighted how, and to what extent, teachers in one university in KZ use ICT.
- The context for the study which covered the distinctive economic and linguistic background to Kazakhstan and the challenges faced by HE.
- Language teaching in Kazakhstan and the particular context of three language systems alongside some of the tensions this has created.
- The significance of the study which raises the contribution to policy makers and the wider academic contribution to understanding the take-up of ICT.

- My personal background and interest in the study, showing the importance of technology in reforming education and in providing a window into the wider world.

In brief, little is known about the use and non-use of ICT among language teachers at the tertiary (HE) level in Kazakhstan, and the goal of this thesis is to shed some light to understand this phenomenon and the challenges that university language teachers face.

The literature review now follows.

Chapter 2: Literature review

The aim of this study is to examine the use of ICT among university language teachers at a case study university in Kazakhstan. This literature review, firstly, gives an overview of research into ICT in education, with a focus on higher education and a special interest in literature from Kazakhstan and other countries with similarities in cultural and economic background, for example, Turkey and Saudi Arabia. The chapters are divided into nine main sections which look at: the background to ICT; the promotion of ICT; the problem of take-Up; micro level enablers and barriers; meso level enablers and barriers; macro level enablers and barriers; factors affecting ICT use in higher education: an ecological perspective; ICT in language teaching and learning: a short history; as well as ICT in language education: present arguments and challenges.

Personal background and interest in the study

My interest is in the effectiveness of technology as a tool to improve language teaching in the developing world, and this led me to research the use of ICT among language teachers.

My focus on education and ICT is closely related to my career. When I began my studies at university during my undergraduate degree, my original goal was to teach English and French. I studied at a time of national independence and when people wanted to improve the teaching of English. My personal experience of being taught English was during my time as a student at school and at university where teachings were based on textbooks imbued with the Soviet government's values which came over as propaganda. We could only access the materials in which stereotypical national scenarios were presented, and so texts were not integrated with cultural understanding but instead with cultural stereotyping. For example, British culture was only presented in the form of products like the Big Ben, double decker buses, and phone boxes. The teaching approach was based on grammar with little oral speaking and with a small amount of listening – this type of learning came with a lot of repetition. This was instructional teaching,

born from behaviorism and drill and practice. This was a time when teachers were looking for innovations. The answer was found in the machines, and so they looked to the use of technology.

Language labs promoted a lot of interest even though they were generally old-fashioned, and the approach was out of date. I was personally taught through this 'language lab' approach in my university days. I also was taught through audio-visual methods when learning French, which would come with a slide projector on the table allocated by a teacher. Sometimes my French teacher used other innovative methods and played a record of French music, or we watched a television programme. I could have been put off technology by the use of language laboratories and the cumbersome machines that we used, but I was not. The main reason for this was that I liked variety in language teaching and learning and this variety was provided with the use of technologies. For instance, during my university days, the English language teaching was heavily based on grammar, and so as a student, I had to spend much of my time doing grammar exercises. However, despite going to the language labs to listen to recordings, I found myself with the chance to listen to other students who were native speakers of English. So, because of this, I felt lucky to experience something different.

As my journey moved from being a university student to an English language teacher in HE, I started using technologies in my language classes in Kazakhstan. I used tapes as I wanted my students to access language that was authentic and natural. This was important to me as an authentic English lay at the heart of my classes and I took my play back machine to classrooms, playing my extracts. It is difficult to imagine how many teachers went through the process of moving this heavy equipment and the complications that came with using VHS videos and reel to reel tapes. It was so time-consuming as a teacher to deal with the technical problems and to sort out the machines in the class before the start of teaching. I reflected on why I continued.

It felt important for me to use technology and overcome the difficulties as I could see the potential in technology, and how it could provide access to different resources that I had never had before. For example, during the Soviet period, English teaching programmes were based on promoting ideologies of the Soviet Party, so all the textbooks contained the stories of workers (kolkhoz, tractor production etc.). With technology, I gained access to other sources, and I understood and learned more about the experiences of other cultures. Authenticity was important to me and being able to access authentic resources with ICT was empowering in my own and many other people's language teaching and learning. And now of course, in this digital age, I can access information from all over the world and even provide a window of insight into my world over the internet. Through technology, I can now work openly and share my thoughts.

While I was working in HE, I had the opportunity to travel and study internationally, first in the pursuit of a certification on Database Management Systems at the National Institute of Small Industry Extension Training (NISIET) in India, and then in the pursuit of certification on Information Technology in Education from the International Islamic University in Malaysia. It was from these experiences that I became interested in the use of information technology in language classes and endeavored to continue my studies to better understand the most up-to-date means of implementing it. I have since obtained a master's degree in Pedagogy and Psychology at the Al-Farabi Kazakh National University.

While completing the coursework for my latest degree in 2011, it surprised me just how little ICT was used in teaching. I saw that my colleagues at work and teachers in my master's degree study were not interested in using ICT. When I discussed this with them, some of the teachers told me that they were facing a lack of time, knowledge and skills. It became apparent to me that knowledge into how we can use ICT could be further developed. This brought me to question why there was so little use of technology, despite the fact there was so much written in favour of it – at least in my own personal experiences and observations. This thesis is an exploration of

this question. My eagerness to know how and why ICT is used or not used at a university level became the reason for my doctorate study, and I felt there was a need for further research in this topic in the context of my home country.

Background to ICT in education

In this introduction, I look at definitions of ICT, and briefly, at the history of ICT in education.

Definition

ICT, in education, is considered as technology that is used with the aim of facilitating teaching and learning. With its development, the scope of ICT has been widened and it is a challenge to define the term as its meaning can vary between education, economics and other sciences.

However, there is an acceptable universal definition across all disciplines, i.e. ICT can be understood as the devices that enable the transfer of information through digital means and the use of digital computers, internet, and devices (Colrain, 2012). In the recent literature, the term ‘digital technology’ is more often used as a term to distinctively describe computer systems.

However, considering the broad range of my review and broad range of tools I am interested in, I prefer to use ICT (Information Communication Technologies).

The term ICT seems to be used more in education in comparison to industries where it might be expected to be more popular. Selwyn (2007) and Kumar (2008) defined ICT as an umbrella term which takes in the use of computers, internet, and other technologies. It can be considered that the term means any kind of media, phone, fax, TV, video, different applications and various services including mobile-learning, e-learning, etc. It is often but not necessarily confined to tools which are computer based (for example, a book or whiteboard are not, by custom, considered ICT). ICTs are often Internet-enabled but not necessarily so. According to UNESCO (2002), information and communication technology (ICT) may be regarded as the combination of ‘Informatics technology’ with other related technology, specifically

communication technology. In this thesis, I explore technological tools to support language learning, particularly programmes, the use of networks and the World Wide Web (WWW), Virtual Learning Environment (VLE), subject software and subject-specific tools (e.g., translation software), as well as the informal use of technology such as social forums.

A brief history

Although those interested in ICT are often interested in the latest technology and in what is new, by looking back it can be seen that ICT has quite a long history. In education, for example, in the late 1970s and 1980s, the introduction of computers in the education system began by providing schools with microcomputers. Early taxonomies of computer use can be found; for example, in Atkinson and Wilson (1969), four uses were identified: tutorials, drill and practice, dialogue, and management. Later, Taylor (1980) distinguished the role of ICT in education as a tutor, tool, and tutee. The computer as a tutor acts as an instructor which presents learning recourses and provides practice by giving feedback and keeping records. As a tool, ICT serves as a task provider for analysis, predictions and pattern recognition purposes. The computer as a tutee serves to support the student and the teacher to obtain new methods of learning. This often suggested a constructionist model, in which by teaching the computer to do something, involves students in a creative process. The focus in many countries was on programming and on the use of small programmes.

If we look at the history of the computers in language learning, at the beginning, implementation was informed by behaviorist Computer Assisted Language Learning (CALL) which predominantly encompasses repetitive drill-and-practice of language structures. In a second stage, Communicative CALL, conceived in 1970s, stressed higher order cognitive tasks and stimulated group work by allowing students to communicate with each other (e.g Underwood, 1984; Phillips, 1987). Later, the Behaviorist and Communicative CALLs came under criticism and so an Integrative CALL emerged, which promoted task-based, project-based and content-

based approaches. This therefore integrated various skills (e.g. listening, speaking and writing) together with technology in the language learning process (Warschauer and Healey, 1998).

The promotion of ICT

Educators and policy makers have largely agreed on the value of ICT to promote teaching and learning. ICT was seen as having the potential to improve the teaching and learning process as well as enhance the quality, accessibility and learning motivation of students (Yusuf, 2005).

Governments have consistently promoted ICT through training, projects, and curricula in all sectors of education. For example, in developing countries like Saudi Arabia and Turkey etc., policy makers are continuously investing in ICT to provide the young generation with an updated education system. By investing in hardware, many government systems have achieved students-per-computer ratios below 10:1. For example, over the last 20 years, the Turkish Ministry of Education has equipped 40 000 schools, 620 000 classrooms, with Interactive White Boards, computers and an Internet infrastructure (Kilinc, Tarman and Aydin, 2018). Likewise, Kazakhstan's policy makers have introduced a programme between 1997-2005 that aimed at embedding ICT into education, and a programme following that in 2008-2010 to systematically improve human resources and increase the accessibility of electronic resources. Another follow-up programme in 2011-2020 further sought to improve e-learning and vocational training (Sapargaliyev and Shulenbayeva, 2013). Similarly, governments of developed countries, such as the UK and the USA, have spent hugely on improving ICT infrastructures in schools (Lawrence and Tar, 2018).

Why has ICT been promoted and with what effect?

There are three main arguments for the use of ICT, and they are strongly related to each other:

1) the world is changing, and so the education needs to change; 2) as education changes, it needs to be more learner-centered; and lastly, 3) technology promotes better learning outcomes.

The world is changing, and so the education needs to change

ICT has had an impact on every sector of society including manufacturing, services, retail as well as social interaction (Robinson, Marshall and Stamps, 2005).

The movement for integrating ICT has often been based on a desire to prepare learners for an information age and to help them be able to function in today`s workplaces. ICT plays a great role in many institutions and businesses nowadays (Zhang and Aikman, 2007). Writers talk about a technological fourth revolution that universities have to respond to by preparing students for flexible and technology-rich careers. It was estimated by the World Economic Forum that by 2030, one trillion devices would be connected to Internet – this is changing the world. van Laar et al. (2007) argued that there were new 21st century skills which were needed to create modern and inventive work environments. Picatose et al.(2018) argued that universities needed to use ICT in their teaching in order to give students the confidence to participate in virtual and social networking environments.

However, technologies were expected to help young learners, not only for work, but for a technology-rich social life (Yelland et al., 2001). UNESCO (2019) argued that critical and analytical skills formed digital literacy which meant that individuals should be able to access information and critically evaluate its content, taking on board ethical and creative issues, and use ICT for self-expression. These again were defined as 21st century skills (UNESCO, 2019). UNESCO thus designed an ICT competency framework to support teachers in their ICT competency as to encourage integration of ICT with education (UNESCO, 2019).

Technology is seen as a disruption to push institutions to adopt cultural, economic and social changes in HE (Richardson, Jenkins and Lemoine, 2017). As universities try to meet the demands of the global world and survive in a highly competitive environment, ICT is seen as changing the nature of teaching and learning. For example, ICT now is implemented in education to monitor student`s attendance, submit assignments, plagiarize check, but more

importantly perhaps, to support new forms of teaching and develop curriculum (Fillion and Ekionea, 2012).

As Weert and Tatnall (2005) have pointed out, learning is an ongoing lifelong activity where learners change their expectations by seeking knowledge. Skills in using ICT will be an essential prerequisite as learners without these skills may be faced with low-income and low-skill jobs. Research has identified a 21st ICT skills framework which entails five core skills (technical; information management; communication; creativity) and five contextual skills (ethical awareness; cultural awareness; flexibility; self-direction; and life-long learning) (Citi, 2016; van Laar et al., 2017). Using empirical evidence, Barak (2018) found that undergraduate technology-proficient students showed less resistance to change and more flexibility in thinking compared to less technology-proficient students. In addition, the importance of ICT skills has been recognized across a range of organizations (OECD 2015; Internationals Society for TechEd, 2017; Redecker 2017)

As education changes, it needs to be more learner centered

ICT has also been seen as supporting desirable changes in teaching and affordances for teaching and learning. Much has been said about the opportunity for a curriculum that promotes more knowledge creation. To elaborate, in traditional education, the teacher was accepted as the ultimate source of knowledge, but now the implementation of ICT in education introduces the idea of student-centered learning. Oliver (2000) stated that curriculum change was one of the aims of effective ICT integration. Through ICT, responsibility can be given to students for their own learning. The integration of ICT in education was associated with moves to personalized learning, thus giving students more choice in how and where they learnt. On this, Blaschke et al. (2015) argues that ICT enables the creation of a student-centered learning environment, leading to a development of student agency.

Embedding ICT in the education process is often seen as an important condition for reforming the education system. The emergence of ICT has coincided with the promotion of theories of learning based on constructivist principles. Technology has been seen to enable social interaction as such interactions play a critical role in the learning and teaching process (Duffy and Cunningham, 1996). In this type of new learning environment, teachers are expected to promote new skills (Wheeler, 2001), collaborative learning (Kirschner and Davis, 2003) and constructivist methodologies (Keengwe, Onchwari and Wachira, 2008). However, this has been critiqued. Bond et al. (2018), for example, argues the effectiveness of face-to-face teaching to support student-centered learning, meaning that technology was not the only influence. Kuhn (2017) stressed the need to investigate students` day-to-day engagement with technology if we want to create more student -centered learning. Marcelo et al. (2015) found that in practice, the use of ICT was more frequently integrated with teacher-centered learning, and that only timid steps had been taken to develop a student-centered learning curriculum.

Technology promotes better learning outcomes

The most important reason for some educationalists to use technology is the supposed impact on teaching and learning outcomes. However, this raises the problem of measuring impact – here, the evidence is mixed and the whole idea of measuring impact has been disputed (Hammond, 2014). A number of previous studies have shown that an appropriate use of ICT can raise educational quality and connect learning to real-life situations.

Recent studies provide further support. For example, Wekerle et al. (2020) investigated the use of ICT to promote HE learning with 381 students. The study showed that students felt engaged when ICT was used in class in active, constructive and interactive activities and that it positively impacted on learning outcomes. In another study, groups with access to a VR simulation showed improved outcomes in the context of Norwegian HE (Wekerle et al., 2020). In another study, survey results showed that self-regulated motivation increased achievement in terms of course

objectives in online courses among 300 undergraduate students taking seven online courses (Hsu, 2019).

Why should technology have an effect? Fu (2013) states that ICT has a tendency to expand education. Online interactions therefore become easier both for teachers and learners as knowledge can be gained through ICT from anywhere and anytime, meaning that teachers and learners are not reliant on printed resources (Fu, 2013). For many years, courses have been written around textbooks and conventional teachers have taught via lectures. Cutting-edge technologies are now supporting other approaches, making varied information easily accessible. ICT in education allows easy storage, and retrieval of data is quick and easy (Balasubramanian et al., 2009). According to Kripanont (2007), ICT gives academics access to different sources and opportunities to share their knowledge with their peers, improves their work productivity, and saves their time and money. ICT has addressed the problem of geographical separation and has made education more open. However, Keengwe and Onchwari (2008) state that while technologies give opportunities for students to work more productively, they do not replace teachers as expected and the role of a teacher in a technology-rich environment becomes more demanding than ever before.

Tensions in the promotion of ICT

Despite the promotions of ICT, there have been contrary opinions. For example, Cuban, in a series of publications, has argued that technology adoption is unlikely to happen, at least not without changes to education. In one study, he found less than five percent of teachers stated that ICT use in teaching had influenced their pedagogy, despite the fact that the study was conducted in two high-tech schools in California (Cuban et al., 2001). Cuban felt that teachers did not have enough time to integrate ICT into their curriculum and that technology did not fit the 'grammar of schooling' – by this he referred to the informal and formal rules that the schools operated by. In schools, Program for International Student Assessment (PISA) analysis

suggested a positive correlation between educational technology use at home and test outcomes (Petko, Cantieni and Prasse, 2016), but there is a debate among researchers as to whether technology at school makes much difference (Lei, 2010). Doubts about technology use are expressed in higher education too and the problems of ICT take-up have been well explored. Selwyn (2011) argued that technologists were 'deluded' in thinking of ICT as a central force for positive change, and he pointed out that ICT has been promoted in education for commercial interests.

Several studies (Cuban, 2001; Cuban, Kirkpatrick and Peck, 2001; Selwyn, 2011) argue that despite all the expenditures made by the governments of different countries on ICT integration and training to improve the implementation of technology, results have not been achieved and promising learning outcomes have not been identified. Institutions have at times rushed into implementation of ICT without due research (Selwyn, 2016; Henderson et al., 2017; OECD, 2018), and the process has been treated in a rather uncritical manner (Robinson, Marshall and Stamps, 2005; Castañeda and Selwyn 2018). Jones (2019) links HE to the neoliberal political economy. He argues that technological changes were key to promoting economic and political competition. In the same vein, Selwyn and Facer (2013) see a relationship between the neoliberal market and educational technologies as well as the distortion of policy by big businesses.

It seems that while ICT brings distinct opportunities for teaching and learning, the effect of ICT has long been overstated. For example, there is evidence that it can be a means to modernize the curriculum, but it is not the catalyst for a more general dramatic change in teaching and learning. ICT has been promoted for different reasons, but these reasons are not always compatible.

There is an optimistic view around ideas of curricular change, keeping up with society, and impacting on learning outcomes but on the other hand, there are voices saying that these goals are not being achieved. I will return to this debate in the discussion of the thesis, but it is clear that the use of technology does not determine outcomes. Thus, it appears that the role of the

teacher is critical if (a) ICT is going to be used and (b) if ICT is to be used effectively. However, in understanding the position of the teacher, we must understand the world in which they work and the opportunities, as well as the challenges that they encounter in using ICT. In the following sections, we will look at what encourages ICT use and what discourages it.

The problem of take-up

Looking back on the past, Pelgrum and Law (2003) saw a general problem with take-up of ICT in education which they hoped would be addressed by the introduction of internet technology. Many research papers argued that the Internet had the potential to address the issues of cost, quality, time and distance. But in reality, familiar issues remained such that access, provider services, quality and price prevented the integration into meaningful pedagogical change (Gamlo, 2014). Not all teachers make good, innovative use of ICT in teaching and learning. The factors that encourage and discourage ICT use have been explored by many researchers and are often organised in different ways (Ertmer, 1999; Bingimlas, 2009; Cubukcuoglu, 2013).

A lot has been written to identify obstacles to ICT use and according to several studies, barriers can be classified as extrinsic and intrinsic. Ertmer (1999) identified extrinsic barriers as 'first-order' and included access, time, support, resources and training. Hence, 'second-order' intrinsic barriers were indicated as attitudes, beliefs, practices, and resistance. On the other hand, Becta (2004) classified barriers into teacher-level and school-level barriers. Teacher-level barriers related to individual ones such as lack of time, lack of confidence, and resistance to change, while school-level barriers related to institutions which included lack of effective training and lack of access to resources.

Another classification which was found in the literature was micro level and meso level barriers (Balanskat, Blamire and Kefala, 2006). This latter classification draws on the ecological perspective of Bronfenbrenner in which an ecosystem is characterized as a set of nested systems (Bronfenbrenner, 1993; 1979). According to Bronfenbrenner, an ecosystem is ordered into

micro, meso, macro, exo layers which are influenced by and interact with each other. A description of each layer is as follows:

A micro system is an environment which is directly experienced by a person in a given setting, for example, a teacher experiences students, colleagues and textbooks. As Bronfenbrenner (1979; 1993) says, there is a pattern of activities, roles, and interpersonal relationships in this setting which invite, permit, or inhibit engagement in sustained and progressively more complex interaction with the immediate environment (1993, p. 15).

A meso system is an environment which links two or more settings containing the developing person; for example, this could be a teacher and parents with whom a child interacts, but not at the same time or place. Bronfenbrenner (1979; 1993) emphasizes the synergy created by the interaction of micro and macro systems.

The exo system links two or more settings, but the person does not need to be present in each. However, like the meso system, events at the exo system that occur directly influence processes within the immediate setting in which the developing person lives. For example, a teacher may be directly involved in some teaching committees, but not others.

The macro system influences and characterizes the given culture, subculture, or other extended social structure, with particular reference to the developing resources, hazards, lifestyles, opportunity structures, life course options and patterns of social interchange that are embedded in such overarching systems. In the education setting, they are known as policies and discourses. For example, the macro system may include policy making at the national level and debates in mass media.

The idea of an ecological system changes depending on the person. For example, for a child, a staff meeting is not a micro system but for a teacher it is. From an ecological perspective, Bronfenbrenner's model of nested ecosystems is interesting to help in understanding the

language teachers' use of ICT. Language teachers are members of different systems including micro, meso and macro.

A picture of the major barriers preventing successful implementation of ICT and enablers that encourage ICT uptake will be offered, organised under micro level enablers and constraints (teacher-level), meso level (institutional-level), macro level (system-level).

Micro level enablers and barriers

Micro level enabler factors that influence the use of ICT in teaching include teachers' confidence, experience, motivation and understanding of the students' learning achievement, as well as usefulness of ICT in teaching and learning. These factors have been discussed by several researchers (Mumtaz, 2000; Bingimlas, 2009; Cubukcuoglu, 2013).

Many studies have examined enablers in particular contexts. For example, an early study carried out by Veen (1993) in a Dutch secondary school showed that teachers' pedagogical orientation influenced ICT uptake, rather than technical skills. Across settings, teacher pedagogy has been explored with the suggestion that if the ICT use tallied well with pedagogy, it was more likely to be used. Of course, pedagogy needs to be seen in a wider context and Bakar (2009) saw that teachers' attitude to technology, pedagogy preference and computer skills were inter-related. In other studies, teachers have been shown to have less than full enthusiasm for technology. In looking at teachers' ICT use in HE in Bangladesh, it was suggested that students were more interested in ICT integration than teachers and that teachers' lack of understanding and motivation for using ICT was a barrier for implementation (Hossain et al., 2016). Similar issues were found in Moroccan HE and Indian HE, where the low level of ICT use in education was in fact due to the teachers' lack of knowledge and skill to integrate ICT effectively in teaching and learning (Khaloufi, 2017; Ramesh, 2020).

Dang (2011) examined 222 language teachers about possible factors which facilitated or hindered the use of ICT in language teaching. The research showed that the most important factor was

teachers' beliefs and attitudes toward technology. In a further study, in a Finnish HE setting, researchers found a range of teacher beliefs. For instance, some saw technology as a tool for self-learning which put a break on its wider acceptance. The study also argued for the systematic explanation of teachers' beliefs at a micro level (Jääskelä, 2017).

In a case study of Nepal's HE, major challenges were reported. These included teachers' lack of skills and experience as well as teachers' lack of belief in the impact of ICT. Teachers believed that ICT could bring advantages, but they still had trust in traditional teaching methods that are not supported by technology. These factors created some student dissatisfaction. The same challenges regarding teachers' desire to use ICT, their beliefs on traditional teaching methods and cultural issues have been addressed at the tertiary setting of Japan with EFL teachers (Caldwell, 2016). Even though at a micro level, teachers understood the potential of ICT to promote students' self-based learning and provide higher engagement in learning, these were not convincing enough to provoke change.

In the same vein in the context of Saudi Arabia HE, EFL language teachers have found that at the micro level, several constraints impede teachers' use of ICT. These include lack of confidence and lack of competence (Gamlo, 2014). Likewise, several studies found that teachers who avoided using ICT did so because of their confidence level (e.g. Bax, 2003; Alshmrany, S. Wilkinson, 2014). For example, Lam (2000) felt that technophobia affected the integration of ICT in the classrooms. In other studies, Jamieson-Proctor et al. (2006) and Henderson (2014) reported that unsuccessful integration of computers in the classroom was closely related with low confidence levels of teachers, caused by embarrassment among colleagues and in the classroom.

Many studies have examined teachers' perceptions, but some have also looked at students' perceptions of their teachers. Tokareva et al. (2019) looked at ICT implementation in HE in Russia and found that in a survey, students showed their awareness of the importance of ICT,

but over a half of the students were dissatisfied with teachers' ICT competence and use. In a further study, this time looking at the use of smartphones, teachers were found to be skeptical on the value of ICT (Alzubi 2019; Leem et al., 2019; Iqbal, 2020). These papers reported that using smartphones for teaching purposes was found to be disruptive, time-wasting and resulted in emotional detachment. However, teachers valued the use of smartphones for off-campus learning purposes.

Meso level enablers and barriers

The following section will give a general picture of meso level enablers and barriers. At this level, issues of access, lack of time, training and access to technical support are covered.

Several studies identified time limitations as a barrier for ICT implementation. Many teachers do have enough confidence and competence, but fail to use ICT or make little use of ICT because of external barriers (Al-Alwani, 2005; Sicilia, 2018). Al-Alwani (2005) reported that a lack of time and busy schedules were the main barriers affecting the ICT take-up in Saudi Arabia. ICT integration could not be rushed and teachers, as well as students, needed more time. Sicilia (2018) indicated that in Canada, both students and teachers had limited time to design projects that support ICT use. In a study of telecollaboration practices in European HE that covered 210 universities across 23 different countries, there was further evidence of meso level barriers such as organizational difficulties, lack of time and technology support (Helm, 2015).

One dimension of barriers to ICT use is in-house training. Early studies argued that limitations of training opportunities impeded teachers' use of ICT (Pelgrum, 2001; Albirini, 2006; Balanskat et al., 2006; Özden, 2007). In more recent reports, Hossain et al. (2016) saw lack of training as a barrier to developing practice.

According to Saudi Arabian studies, reasons for failing to implement ICT include shortage of qualified teachers and weakness of technology training courses (Bingimlas, 2009). Khaloufi et al. (2017) felt that issues concerning teachers' ICT skills meant that there was a need for effective

training. The conclusions in Ramesh (2020), that looked at the challenges of implementation of ICT in Indian HE, also felt the role of training was crucial.

The quality of training was also important. Balanskat et al. (2006) argued that teacher training courses focused on teachers acquiring basic ICT skills were not helping to improve the teacher's ICT use because these programmes did not focus on teacher's pedagogical skills in relation to ICT. Albirini (2006) pointed out the importance of the pre-service teacher training for teachers to have experience with ICT before implementing it in teaching. Support those teachers receive at the meso level was seen as influential in impacting teachers' desire to use ICT as noted by Caldwell (2016).

However, the most frequently referred to obstacle in the literature is the lack of access to ICT. The issues here are different across institutions and countries as in some systems, there are functioning networks where both teachers and students have access, while in other systems, this is not the case. Easy access is important and past research (e.g. Scrimshaw, 2004) showed that teachers believed having your own laptop might affect students' learning practice. Anas (2019), in understanding the use of EFL teachers' ICT use in Indonesian HE, argued that institutions might have difficulties in providing equal service to all staff. Farjon et al. (2019) investigated the technology integration of pre-service teachers in Netherlands HE and found that access to technology had the weakest influence compared to teachers' attitudes and beliefs. Although accessibility of ICT has been found as important for successful integration, Farjon et al. (2019) argues that it is less likely to occur in Western countries where skill is the most important factor for successful implementation of ICT.

Macro level enablers and barriers

Issues related to policy, curriculum, and funding of ICT infrastructure are identified at the macro level. To integrate ICT into teaching, teachers should feel comfortable using them. A lack of vision to integrate technology in all micro, meso, macro levels into curriculum is a real challenge

as it leaves uncertainty to expectations, and this in turn affects behavior, belief and commitment of individual teachers (Collins and Halverson, 2009). In order to promote implementation of ICT infrastructure, ICT policies and curriculum need to line up (Collins and Halverson, 2009). According to Buabeng-Andoh Charles (2012) and Elzawi and Wade (2012), ICT use in developing countries heavily rely on government support and they recommend that governments should start with policies that guide and assist ICT implementation.

Demographic factors such as age, gender, geographic location, climate conditions, religion, literacy rate and certain cultural realms have all been mentioned as constraints at macro level in the up-take of ICT in certain developing countries (Hennessy et al., 2010). For instance, Shahadat et al. (2012) reported in their article that misuse of government funds is a potential barrier to develop ICT integration in education. Hossain et al. (2016) also raised the importance of ICT infrastructure (e.g., ICT equipment) and the continuous improvement of systems. In the case study of Nepal's ICT integration in HE, Rana et al. (2020) reported the lack of clear strategy to implement ICT policy. Even though the government acknowledged the need to develop ICT, there was a lack of funding leading to the involvement of third parties to provide ICT infrastructure. In the case of Africa, Menda (2006) pointed out that language had been identified as one of the obstacles of ICT implementation; for instance, 95% of the Tanzanian population can only speak in their tribal language. This poses as a problem as the dominant language of technology is English.

Muhoza et al. (2014) showed that there were gaps and tensions in ICT policy in particular differences of understanding between institutions and national policy makers. The lack of a coherent ICT policy in HE systems makes it difficult to achieve a focus on teacher training courses and implementation, even when there are appropriate tools (Barakabitze, 2014).

Summary of ICT in education

The key points that were made are:

- ICT is seen as having the potential to improve teaching and learning processes, as well as enhance the quality, accessibility and learning motivation of students.
- How the problems of ICT take-up have been identified by other researchers.
- Micro level enablers and disablers include teachers' confidence, experience and motivation, their understanding of students' learning achievements as well as their perception of ICT usefulness.
- Meso level enablers and disablers include access, lack of time, training and access to technical support.
- Issues related to policy, curriculum and funding of ICT infrastructure are identified at the macro level enablers and disablers of ICT use.

So far, the issues facing ICT implementation have been discussed at different levels, albeit there is a focus in the literature on the micro level. However, it is important to see how systems work in a more holistic context to take into consideration micro, meso, exo, macro enablers and barriers. In order to have a sustainable implementation of ICT by language teachers in HE, it is crucial to have sustainable mechanisms to provide support at different layers.

ICT in language teaching and learning: a short history

In this section, I explore the literature on the use of ICT to support language learning. In particular, I will look at earlier uses of technology in language learning and then introduce how technology can be used in different ways to support teaching and learning.

A long view of technology in language learning

The use of ICT in language teaching has developed over time. However, using technology in language learning and teaching is not a new idea. A retrospective review of technology in language education shows that technologies emerge, wax, and wane in a cyclical pattern, affecting language teaching and learning at various points in history. Technology has been developed and

imported into language learning and its use has increased and declined at various points. Looking back at technology use Warschauer and Healey (1998), Salaberry (2001) as well as Zhao (2007) discuss the use of technology under the following headings: audiovisual communication tools (phonograph, radio, and video), classroom teaching aids, language laboratory, CAI (computer assisted instruction), CMI (computer mediated instruction), CALL (computer assisted language learning), artificial technology tools and mobile technologies. The range of available applications has continued to grow since Salaberry's (2001) review. Here, we look at what can be learnt from the past and in particular, we look at: Audio and audiovisual tools; Language Laboratories; and CAI.

Audio and audiovisual tools (telephone, television, films, video)

Broadcasts, television, films, video and audiovisual materials in language classrooms have been long used because they help stimulate and facilitate access to the target language and can be used for more general pedagogical purposes. One example of early technology adoption was the use of the telephone for pedagogical purposes. Twarog and Pereszlenyi-Pinter (1988) summarized the results of implementing a two year "telephone assisted language programme" at Ohio University that gave feedback and assistance on the students' learning. The students on this programme followed the same curriculum as other learners, but the difference was that they had been provided with personal assistance from tutors via telephone. It was argued that this programme was effective, timesaving and motivating. An example of telephone-use in a classroom setting in language teaching was the teleprompter. Buscaglia and Holman (1980) used the teleprompter to stimulate communicative activities. This allowed teachers to record and play back the conversations which helped teachers to make notes and critique the conversation. It also helped students to develop their listening skills and to communicate more successfully.

Another earlier tool, one that has been overlooked, was overhead projectors. Pond (1963) identified the main characteristics and advantages of the projector such that they allowed

teachers to prepare classroom materials beforehand; to present material in a more attractive way; to highlight, underline; and to support creativity among teachers. Above all, they were easy to use. This argument resurfaces later in studies about Interactive White Board (IWB).

A lot of research has been carried out on the use of television and video in language education. For example, one of the earliest studies at the University of California concerned the use of television. According to Gottschalk (1965), the visual presentation was useful to language learners because learners 'use their eyes as well as their ears' and better absorb the language in this way. During this experiment, 50% of the class time involved television instruction and the findings showed that the students achieved better results in their final exams in comparison to those in the classes that did not involve television instruction. However, one of the drawbacks mentioned by students was they could not ask questions to the TV, which showed a lack of interaction.

Demonstrating visual material can create a direct link between the word and the object, as well as create attachments in memory between the visual and written. There are many techniques and styles of presenting visual presentations. Lottmann (1961) described the advantages of using filmstrips in L2 and suggested some pedagogical techniques, for example: to provide five to ten minute introductions before watching a specific topic, including transcripts, indicating particularities of pronunciation of unfamiliar words before watching the film, and after watching the film, to give time for discussion. Stages have also been proposed by Swaffar and Vlatten (1997) for the implementation of video activities.

Indeed, video has been considered an inexpensive tool for foreign language learners to access authentic voices that highlight dialects and voices in cultural contexts (Svensson et al., 1985; Lutcavage, 1990) as well as to motivate students (Hennessey, 1995) and stimulate listening comprehension (Hanley et al., 1995; Rubin, 1998). However, despite such pedagogical benefits, it

was argued that language teachers remained reluctant to integrate video materials into their curriculum even if the technology was available (Cook, Stout and Dahl, 1988).

Cook et al. (1988) reported that teachers were afraid of using technology in classroom teaching. Lack of adequate training, in addition to time obstacles for designing video-related activities were reported by Mc Coy (1990). Cook and Dahl (1988) assessed a three-week short course with 30 German language teachers in South Dakota. During this period, teachers developed their ICT proficiency and used video materials in language teaching after completion of the course; this showed the importance of training if technology is to be used. Among other studies, Hanley et al. (1995) argued that the richness of context in video facilitated comprehension. In this study, he compared a group with access to video (a short video presented alongside a teacher narrative) and picture+teacher group (the teacher presented the narration by reading aloud and showing the picture). The results showed that video was more effective in enhancing comprehension. However, the author reported the limitations of his study such that students' reading and listening skills were not assessed. Also, the experiment could have had different outcomes if different kinds of video material had been used.

Rubin (1990) studied the use of video to improve students' listening comprehension of Spanish. The findings revealed that students who watched dramas on video improved significantly in comparison with the group who did not receive video support. The author concluded that video materials needed to be well chosen to be useful and used in combination with effective strategies.

Translation has always been a part of language learning and teaching and subtitling for developing language knowledge has been important for translation. For this reason, a lot of research has been carried out with the use of subtitles in video lessons. For example, Williams and Thorne (2000) described a course in Welsh/English subtitling at Saint David's university college, Lampeter. In this course, students were asked to subtitle a four-to-five-minute selection

of a TV programme. Students had to have a good knowledge of both spoken and written Welsh and English. However, students reported that they had difficulties in understanding and subtitling dramas and soap operas, as they had been taught a more literary Welsh. However, they found the exercises in subtitling course beneficial as they improved their listening skills. The researcher suggested that using subtitling could be motivating and encouraging for foreign language learning.

In a related study, Baltova (1999) explored the use of subtitles under three different conditions for beginner level school learners: the reversed condition (English audio and French subtitles provided); Bimodal condition (French audio with French subtitles); Traditional format (French audio but no subtitles). The finding showed that the Bimodal condition was significantly better for vocabulary learning than other conditions as it provided simultaneous exposure to spoken, text and visual information. A positive impact was reported even with inexperienced language students.

Later, Bianchi and Ciabattini (2008) used subtitles with English learners at different levels of proficiency in an Italian university with varied video type, content familiarity, language level, and language complexity. 85 students watched films with English and Italian subtitles and the participants were divided into three groups according to their language ability. Results of the study varied. However, the subtitled group obtained better results in content comprehension regardless of the level of student and type of the film. Beginner level students found the captions more useful.

Herron et al. (1998) carried out a study on the use of video in the classroom comparing students in a 'declarative advance organiser' approach with an 'interrogative' approach. Those in a 'declarative advance organiser' approach was given background information about what they were going to watch, while those in the 'interrogative' approach were interrupted and were asked

questions at various points while watching the video. It was found that students who were in the interrogative treatment scored significantly better in comprehension tests.

Language laboratories

For a period, much discussion of technology in language concerned the use of language laboratories (LL). Many articles that illustrated the rationale and use of the LL were published between 1960-1970. (see for example Huebener, 1965; Hayes, 1968; Dakin, 1973). At that time, audio lingual methodology was promoted in foreign language learning and language laboratories were seen as supporting this methodology. A significant point to make is that compared to other technologies, LLs were specifically invented for foreign language classes (Lorge, 1964). Huebener (1965) claimed that there were specific benefits of LLs, including individualization of learning. Dakin (1973) also pointed out that LLs could provide extended practice for individual learning. Hayes (1968) claimed it encouraged students to evaluate their performances and gave opportunity to listen to ‘native voices’ in addition to teachers.

LLs gained increasing acceptance in most institutions and their use was supported by policy makers, particularly in the USA. However, their use was over promoted perhaps, as LLs were seen to be imposed upon in schools. Locke (1965) claimed that the American government spent “half the budget of any public support on LLs”.

In the literature, there were ‘anti-lab’ articles which had led to debates about their usefulness. Keating (1963) published a study where he had shown the worthlessness of LL. In response, Anderson (1964) and Grittner (1964) claimed that Keating (1963) used biased sources that involved unsuitable materials for LLs and inappropriately trained teachers.

Computer Assisted Instruction (CAI)

Following on from LLs, interest in CAI increased as computers became more affordable. Most of the studies were conducted in the wake of new optimism around the pedagogical effectiveness of CAI. One early study for example, Adams et al. (1968), claimed that “CAI as an educational

tool has potential in its capability both to supervise students` performance and to monitor, record, analyze or to summarize data about their performance” (p.3.)

As an example of CAI, the Programmed Logic for Automatic Teaching Operations (PLATO) delivered teaching programmes through a central computer system. Scanlan (1980) reported on three Latin courses on the PLATOIV CAI system. These programmes were described as complementary to the taught curriculum and earlier, Adams et al. (1968) had described the implementation of a CAI as an addition to the textbook. Fletcher and Atkinson (1971) carried out an experimental study to investigate the effectiveness of CAI with first grade students. In this study, the students in the experimental group received eight or ten minutes of computer-assisted language instruction per day for five months. The results of the study showed that students who received computer-assisted instruction achieved, on average, better marks in their reading performance than those who did not.

Research on the early stages of CAI integration highlighted technological benefits; for example, Keller (1987) pointed out the speed of electronic dictionaries was “noticeably faster than paging manually through a conventional one”. He also noted the unlimited storage capacity that computers could provide for, for example synonyms as well as grammatical patterns.

Researchers discussed the use of CAI in language teaching and learning in more general terms. It was stated that the aim of CAI was to move from an instructor model to a facilitator role as for example, seen in the use of word processing and later the Internet. The disappointment with the CAI led into Computer Assisted Language Learning (CALL). To give an example, Cook (1985) explored whether the word-processor could help seventh-grade students in their writing performance. The experimental group wrote their work on word processor while the control group wrote with pen and paper. The finding of the study showed that students who wrote with a processor showed considerable writing growth compared to more traditional pen and paper group.

Later, uses of CAI were less about drill and practice and more about general instruction. Ali Farhan AbuSeileek (2007) carried out research to investigate the effect of a computer-assisted programme to develop the writing skills of Jordanian students studying English. The findings of the study revealed statistically significant gains when comparing the experimental group with the group receiving instruction via a traditional method.

In another study, Orndorff (1987) employed a CAI program focusing on critical reading and thinking at Duquesne University in Pennsylvania. Students in this programme were taught to analyze a work of literature and teachers could create tutorials in the form of question-and-answer formats. This programme also included different types of activities including essay writing and summary writing. The programme was generally seen as successful.

However, despite optimism about the pedagogical use of computers and positive results of CAI implementation in language teaching, CAI programmes faced the same fate as other technologies and failed to spread rapidly. Perhaps, reflecting on this, later research was more critical. Dunkel (1987) saw that the “computer will be just another in a series of highly touted technological tools that have neither revolutionized nor lived up to initial promises” (p.254). Kleinman (1987) also concluded that electronic textbooks would fail because most of the software consisted of drill and practice. There were increasingly diverse viewpoints (positive and negative) on the value of CAI. For example, Clark (1983), after reviewing of meta-analyses on learning advantages of various education technologies, claimed that there were no learning benefits from employing any specific technology and positive results could be gained due to the methods or the content, but not due to technology.

Reflections on early use of technology

In looking at the earlier use of technology in language teaching and learning, several questions were posed by Salaberry (2001). He asked whether technologies such as radio, TV, video,

computer etc. were revolutionary or not. He also tried to understand whether they have benefited foreign language teaching (FLT).

Regarding pedagogical effectiveness of varied technologies, he raised these four major questions:

a) is increased technological sophistication correlated to increased pedagogical effectiveness?; b) which technical attributes specific to new technologies can be profitably exploited for pedagogical purposes?; c) how can new technologies be successfully integrated in to the curriculum?; and d) do new technologies provide an efficient use of human material resources?

To expand on his first question, I draw upon the work on Cook (1994) and Levy (1997).

Salaberry (1999) claimed that the research on the use of technologies for pedagogical purposes mainly focused on the technical capabilities and lack of educational planning. Hence, it would be better if the teachers were expected to focus on pedagogical objectives when choosing any technological tool. The evidence lies in support of his view. For example, as discussed previously, Cook et al. (1988), Twarog and Pereszlenyi-Pinter (1988) as well as Williams and Thorne (2000) show the importance of having skilled and trained teachers if technology is to be used successfully. This suggests that increasing technological sophistication in education has little benefit if teachers are not properly trained to use these technologies in effective ways.

With regard to his second question, Salaberry (1999) claims “the adequate exploration of the pedagogical possibilities that new technologies provide can proceed only through careful scrutiny of whether the attributes of technological tools are potentially useful” (p.51). In support of Salaberry (1999), several studies have shown the value of specific features of technology (Buscaglia and Holman, 1980; Baltova, 1999; Williams and Thorne, 2000; Bianchi and Ciabattini, 2008). Past literature highlights the value of creativity and exploiting attributes no matter what they are. For example, Williams and Thorne (2000) showed the value of the creative use of subtitles by getting students to write their own subtitles. To some extent, this was an unpredictable use of the technology, but it seemed to work very well.

The third question refers to the integration of technologies to the curriculum. Salaberry (2001) claimed that the success of a technology-driven activity depended on the accomplishment of pre- and post-activities. In other words, it is not the activity that is important, but how the students were prepared and how the teachers effectively used the activity afterwards. This is confirmed in the examples of this chapter, for example subtitling under different conditions and video advanced organizers as cited earlier. Several studies (e.g., Hayes, 1968; Atkinson, 1972; Dakin, 1973; Orndrof, 1987; Herron et al., 1998) have also shown that technology can be successfully integrated with the curriculum. For example, with technology, students are provided with the opportunity to undergo drill and practice outside the classroom, giving more time to practise during classes. However, the use of technology can create a problem for assessment as it can lead to changes in teaching and learning which do not easily support pen and paper high stakes examinations.

Lastly, are new technologies providing for an efficient use of human and material resources? In regard to this final question, Salaberry (2001) claimed that in order to implement technology successfully for the purpose of FL teaching and learning, the financial, legal, pedagogical, technical constraints had to be overcome. Although, the evidence is mixed showing that technology has gone in the wrong direction at times; for example, language laboratories required a lot of expense for little gain. The use of the technology is more beneficial when its use is structured, the material resources are well-selected, and teachers and learners are appropriately trained. However, the effectiveness of ICT in language education is not easy to identify for a number of reasons. First, people tend to talk about ICT in a general sense when we need to understand the benefits and problems in using specific technologies, rather than focusing on the generic properties of ICT. Second, ICT can be used in many different ways which makes it very difficult to generalize about learners, curriculum and teachers and to pinpoint any gains as the result of using ICT.

Stockwell (2007) in his review of CALL literature identified the possible reasons that might influence the choice of technology in language teaching which includes the following: pedagogical objectives (technology is selected due to specific enabling features), institutional decisions (decisions beyond the control of teachers), personal curiosity (motivated skillful teachers), and trends and fashions (influence of current trends). It is interesting to note that these influences for the use of technology in language teaching have not substantially changed over time. For instance, Clarke (1918), in talking about the phonograph, argued that pedagogical use of technology was motivating, enabled innovative teaching tools, engaged students and stimulated memory. Then, years later, Zhao (2003) concluded that technologies made access to language teaching materials more efficient, allowed for stronger memory lines, and increased motivation.

It seems that when new types of technology emerge, they are often perceived as more beneficial than previous ones. For example, the radio was seen as having more potential than the phonograph as it offered the novelty of communicating over a distance (Bolinger, 1934). A decade later, researchers continued to emphasise the benefits of radio, stressing its access to a variety of dialects, teaching of grammar in context, availability of listening to the target language, ability to increase motivation, varied selection of topics for classroom discussion, and more importantly, stimulation of independent learning (Mohr et al., 1973; Wipf, 1984). This illustrates how people are often enthusiastic about technology and its advantages, but this still leaves the problem of the adoption of technology.

The evidence for possible impact is good, as new technologies can be beneficial in developing different language skills. The value is clearer when its use is structured, well-chosen and when teachers are prepared, trained and use the technology effectively. There has been evidence of unexpected use of technology such as the technological tools as described earlier (e.g., the use of subtitling in translation exercises). Training teachers in technology use is vital because there are

many different approaches to using technology. It is clear that we cannot have effective use of technology without teacher guidance and support. The question of how learners benefit from technology use has not been fully answered as the evidence often comes from controlled, short period studies and there is a need for convincing evidence from longitudinal studies. How to implement the technologies successfully for the purpose of FL teaching and learning, and how to overcome the financial, legal, pedagogical, technical constraints still remain open.

ICT in language education: present arguments and challenges

So far, I have looked at the earlier use of technology but in the recent years, technology use in language learning has become diverse. Therefore, rather than taking the reader through each technology, I would like to talk about the contribution of technology under four headings by following Zhao (2006): access to target language; communication opportunities; feedback; and motivation.

Access to target language material

An essential condition for successful language learning is one's access to authentic target language material (Rogers and Medley, 1988). No matter how we learn the language, whether it is in classes or in a self-study setting, access to target language material is essential because the goal of language learning itself is to be able to understand and use a second or additional language in an appropriate way with target language speakers. However, there is always a challenge with the target language and the second language learner. Authentic language is unpredictable, people speak quickly, and it takes time to formulate ideas for oneself. So, the role of a language teacher is to prepare students and gradually open them to the new language by providing appropriate material and suitable tasks. Many educators have identified ICT as possible means to address to this issue (Salaberry, 2000; Hanson-Smith, 2003), for example, allowing learners to have opportunities to interact in the target language with an authentic audience as well as involving

them in well selected tasks, using authentic texts and so, adapting activities so to students' learning levels.

Rogers and Medley (1988) divided authentic materials into three themes: video authentic materials; audio and print; and media materials. Zhao (2006) updated the list by including: using digital multimedia technologies; video and the Internet; as well as multimedia. Both agree that authentic materials can help learners see the language in context, and also provide them an insight into understanding the cultural context, This can increase the students' confidence and motivation to learn as seen in Kelly et al. (2002) and Kilickaya (2004).

ICT can enable access to varied types of authentic resources; this can range from carefully chosen quasi-authentic material to highly authentic cultural materials. Becta (2010), who studied language learning in British schools, suggested that MFL teachers could support students by accessing native speakers and provide a more relevant contextual social network platform such as Thinkquest. Becta (2010) also provided links for teachers to make use of authentic target language on sites such as Request and Momes for students, where they could practice individually by using applications like Globster. These applications can support students' creativity to post their own videos and audios in which teachers can also post back feedback and encouragement. Furthermore, there are many different applications that can help to develop students' various skills like Animato and Voice-bread. ICT can be an aid for creativity, for example having learners design their own learning materials on sites as Taskmagic and Fun with Texts.

Herron, Cole and Corrie (2000) found that using video in teaching improved the understanding of target culture for undergraduate French language learners. Herron and his colleagues investigated 50 beginner level French students and how they accessed cultural information embedded in videos. A questionnaire analysis showed a significant gain in overall cultural knowledge. The study argued video could be used as an effective tool for intercultural

understanding. However, the authors pointed out the limitations of the study, suggesting that type of video and language level of students may have an impact on effectiveness.

ICT provides access to everyday cultural material designed for target language communities such as songs, recipes, radio/TV broadcasts and newspaper articles. This can help a learner to experience the language in the context of the target language, and learners can use that knowledge in their own community (Kilickaya, 2004). For example, in one study that used interactive TV (ITV) with independent adult learners, Fallahkhair, Masthoff and Pemberton (2004) reported that adult learners found the up-to-date authentic material broadcast on TV very attractive, and they perceived it as a valuable learning tool. During the study, the learners were offered on-demand programmes together with supported subtitling. The study highlighted important things to consider. For instance, the range of media programmes used by adult learners increased appeal, and subtitling was important in language learning. However, there were constraints of incidental language learning such as grammatical limitations.

Additionally, some authors have stressed the value of multimedia formats of online materials, for instance, a combination of visual and aural formats including texts, photographs, music and animation. Using digital multimedia can be considered more appealing than text materials with it being easier to decode (Hanson-Smith, 2003). Multimedia mixes formats to appeal to different learning approaches and cover both listening and reading skills. Students using digital multimedia can follow the flow of the conversation in real life and can have the opportunity to see the embodied language and replay. Wang, Teng and Chen (2015) conducted a study to help students' English vocabulary acquisition using an iPad application with 74 students in a private Taiwanese university. The "Learn British English Word Power App" was used for about 15 minutes over an 18-week period with an experimental group, while a control group used a non-digital method to learn vocabulary. He argued that hearing the pronunciation and linking it to visual images worked well. Finally, Stepp-Greany (2002) reported that students are often positive

and practical when using technology to search for authentic materials which helps improve their cultural knowledge, independent learning skill, as well as language skills. In addition, the Internet enables the learner to access the latest news. (Herron, Cole and Corrie, 2000).

Communication opportunities for language learners with ICT

The use of ICT in EFL teaching has provided the opportunity for students to interact with one another in and outside the classroom (Meurant, 2011). In one study, Liu, Lan and Ho (2014) explored the effects of web-based collaboration on independent vocabulary learning among English language learners. They found that the web-based collaboration led to improvements on learners' vocabulary size; it was also associated with enhancing confidence and motivation which in turn enhanced self-regulated learning.

A second major contribution of technology is to enable interaction between teacher to teacher, student to student, as well as school to school (Hanson-smith, 2003; Kern, Ware and Warschauer, 2008). Network-based social computing technologies like Web2.0 and asynchronous ways of communication allow students to communicate with their peers in a target language without time and distance barriers (Golonka et al., 2014). These communicative affordances of ICT have been studied by looking at Web 2.0, blogs and wikis. Summarizing the efforts in this area of computer interaction can be grouped into two: asynchronous and synchronous.

Synchronous interaction with computer

In regard to synchronous instruction, it occurs in real time and participation is required. (Romiszowski, Alexander and Mason, 2004). Early studies (e.g. Hanson-Smith, 1999; Warschauer and Kern, 2000) pointed out the benefits of synchronous interaction in foreign language teaching, but there was a lack of clear evidence that learning with ICT was more effective than conventional, face-to-face classroom language teaching and learning. However, later studies have reported noticeable improvements in some aspects of language learning via

synchronous interaction (O'Brien and Levy, 2008; Sykes, 2008). O'Brien and Levy (2008) presented the results of a study on the use of VR in a German language class. 42 students during their first semester participated in this project at a Canadian university. Students spent an hour of class time per week in the computer lab. The results of the study showed that students increased their cultural knowledge of German through synchronous virtual world experiences and had experienced the culture in a more meaningful way.

The same point has been emphasized in another empirical study; Sykes (2008) measured the effects of three types of synchronous communication including text chat, oral chat, and face-to-face communication in the context of pragmatic instruction with Spanish students during their third semester. Students were divided into three groups and each with 27 students. Sykes (2008) found that in written text messages or chat interactions, students improved their construction of complex structures more than students who belonged to the oral or classroom discussion group. Other studies have found that students who practised chat showed oral speaking improvement (Payne and Ross, 2005; Blake, 2009). Blake (2009), in an exploratory study of students using Internet chat, found that learners gained higher scores in comparison to a face-to-face discussion group. He reported similar findings with a group of 34 English language learners who participated in a six-week course, but in separate environments: a text-based one and a traditional face-to-face one. Findings showed that the chat environment improved students' oral language frequency and facility in grammar and lexical knowledge. A weakness of the study acknowledged by the author was the small number of students in the study and also, the students in the chat group had face-to-face chat which could have influenced the experimental group's oral fluency.

In one of the earlier studies into synchronous computer-mediated communication (CMC), Healy-Beauvois (1997) addressed the effects of synchronous CMC on oral development with 83 French students throughout one semester course. Students who participated in this study had chat discussions once a week in a chat computer lab. The results showed the experimental group

outperformed the control group in oral tests. The chat environment provided access to additional interactive language practice and allowed students to practise other skills such as writing and reading. It also provided a 'friendlier' environment for language interaction.

Shih and Yang (2008) presented 3D synchronous communication for undergraduate students and indicated that learners enjoyed the virtual learning environment. Harless, Zier and Duncan (1999) reported on the effectiveness of the virtual learning world in an Arabic Defense language institute. This programme created an opportunity to communicate in a virtual environment and to interview native speakers virtually. Participants' reading and speaking skills were improved after significantly interacting with speakers virtually after eight hours per day for four days.

Virtual games have been also studied but not all the studies have shown positive results. One study revealed that video game participants learnt less vocabulary than the passive observers of the game (Dehaan, Reed and Kuwada, 2010). The reason given was that the game players were so engaged with the game instead of learning new words.

Chat can be text-based or audio. Chat enables collaboration among students and supports communication between students and native speakers without distance constraints. A few studies tested the efficacy of text or voice communication. Satar and Ozdener (2008) in a quantitative study found that students practising voice and written chat during a four-week period of daily 45 minutes sessions, increased their speaking proficiency and produced a greater quantity of output than students in a conventional classroom learning environment. Because of its written format, text-based chat may promote learners to focus on word formation (Zhao, 2006). According to Warschauer and Healey, (1998) students who prefer communicating through chat produce more words and use more complex morph syntactic structures.

Interaction with asynchronous computer technology: Web2.0 tools

Asynchronous CMC, wikis, Internet forums, blogs and teleconferencing technologies have been used to create authentic opportunities for language learners without the constraints of time and

distance communication (Beauvois, 1997; Warschauer and Healey, 1998; Salaberry, 2001; Loncar, Barrett and Liu, 2014; Sadeghi, Rahmany and Doosti, 2014). Asynchronous communication fosters negotiation, promotes better participation, and provides greater time for language practice which leads to more output in the target language (Beauvois, 1997; Warschauer and Healey, 1998; O'Brien and Levy, 2008).

Berge (1999) emphasized the importance of interaction between teachers and students as well as students among each other. Learning involves human interaction of which modern technologies can provide distinct types (Hines and Pearl, 2004). Asynchronous communication occurs in delayed time so that teachers and students are not required to participate simultaneously (Appana, 2008). One of the early examples of asynchronous instructed distance education was correspondence schools (Keegan, 1996), asynchronous voice conferencing (McIntosh et al., 2003), and text-based conferencing (Berge, 1999). The idea of asynchronous communication is not new but now, it can be carried out in many forms: voice, message, audio, emails, or chats. Learners can easily access archives, i.e., the stores of text and audio messages.

To determine the effectiveness of asynchronous discussion, Koory (2003) carried out a study comparing traditional face-to-face university courses with online courses on literature. The online-taught course required message board postings while the traditional course was delivered in a university class environment. Online students showed better achievement grades and produced more written work compared to students in the face-to-face course. Koory (2003) concluded that “text-based communication in the online class reinforces the skills pertinent to a literature class” (p.1).

Analysing the content of posting based on the critical thinking and problem-solving criteria, Meyer (2003) analyzed the content of posts of graduate students in threaded discussions. She found that 51% of postings related to information obtaining, 27% directed to problem solution, 18% concerned the formulation of problems, and only 7% involved critical comments. Meyer

(2003) concluded that “integration and resolution especially require ‘time for reflection’ which may be more likely to occur in the extended time period of the threaded discussion” (p.9).

Abuseileek and Qatawneh (2013) explored the effects of synchronous and asynchronous oral discussion on question types and strategies used by EFL learners. EFL learners were randomly assigned to two treatment groups using synchronous CMC and asynchronous CMC for six weeks. The synchronous CMC group produced only short, clear and definite answers while question types and strategies were more restricted and closed. However, the asynchronous CMC group produced significantly more discourse functions related to question types and strategies.

One of the most common forms of asynchronous interaction is e-mail; the use of email for writing assignments has been discussed by Warschauer (1997; 1998). E-mailing was found to be successfully integrated into the teaching of language (Warschauer and Kern, 2000) and interaction has been characterized as collaborative and learner-centered (Tella, 1992; Warschauer, 1996). Absalom and Pais Marden (2004) discussed a project involving the use of email between non-native speakers in the Italian programme at Australian National University. The e-mail exchanges took place in one semester where 80 students across four levels were involved. The findings of the research revealed that the integration of e-mail added value both for students and teachers in motivation, development of linguistic abilities, and communication in an authentic context as well as other skills. This shows how students can create a learning community, and how open exchange among learners can help foreign language learners, even when that was not the original purpose of the exchange.

Tella (1992), in an ethnographic study, attempted to describe the process of using e-mail over the period of one semester. Students in six classes in three senior secondary schools in Finland experienced the new learning environment, and the aim of the project was to examine gender sensitivity of e-mail and gender equality in a Finnish high school. He found that both genders enjoyed working with CMC compared to the ordinary English classes in Finland, as this

approach was more learner centered. He also suggested that CMC classes should pay attention to gender as his findings showed that males were more interested in hardware whereas girls were more interested in word processing skills.

In another study, Abrams (2004) tested CMC comparing the performance of three groups of learners (a control group, a synchronous CMC group, an asynchronous CMC group) in discussion tasks during a semester course. The study reported that the synchronous group showed better learning gains compared to the two other groups, and that the asynchronous group did not outperform the control group. The author felt that the asynchronous group might be less motivated to participate in the discussions as a result of delays in responses to messages.

Regarding asynchronous online learning, Moore (2004) suggested following guidelines for asynchronous instruction in any discipline. They proposed: a) to support students to adjust their new roles in an online environment; b) to set distinct aim of the syllabus as well as day-by-day lesson planning; c) to make sure that the online course material is comparable to that of traditional classroom material; d) to provide technical support; e) to minimize technical constraints; f) to support students interaction with instructors; g) to include student feedback; h) to upload material, topics, course guidelines; i) to allow student practice; and j) to demonstrate students` progress. This seems applicable for foreign language teaching as well as other disciplines.

Blogs

Blogs are comparatively new forms of personal online publication used in foreign language teaching. Ward (2004) defines blogs as “a free online publishing house for anyone who cares to write and for those who cares to read it” (p.1). He also argues that blogs can be helpful in developing reading skills and as they are available in different languages, they can be used as authentic material. Godwin-Jones (2003) identified two main features of blogs: interactivity and

collaboration. The interactivity of blogs is shown through the use of posts and readers reactions related to the content.

Several researchers presented their ideas how to use blogs in language education. Ducate and Lamicka (2005) described two projects in a German class at an American university. The first project involved students creating a weekly blog about German lifestyle for a six-week period, while the second involved a travel journal in which students blogged about their expectations before leaving for a trip and updates while they were abroad. This second project was active for a month and during this time, teachers and students and family members commented on their posting. The study showed how blogs could be useful to foster cross-cultural communication and improve other language skills.

Blogging can be an excellent tool for improving a student`s involvement and increasing motivation, but most importantly, it can be used to develop different language skills, especially writing skills. Kung (2018) explored students` perceptions of academic writing through blog assisted language learning (BALL). The research was carried out in an academic writing course for one semester with advanced-level English language students in a research-based university in New York. Purposefully sampled 34 students met three hours per week for 15 weeks to improve their academic writing skills. Findings revealed that students perceived gains in writing through BALL. However, their motivation and confidence did not increase. The author argues that before implementing Web2.0 technologies across higher institutions, teaching staff and programme administrators should understand potential drawbacks that might influence students` learning. This offers a more realistic view.

The importance of understanding learner perspectives was also shown in a study by Lin, N. Groom and C. Y. Lin., 2013 which addressed Taiwanese ESL students` experiences on a writing course that used the BALL methodology at a university in Taiwan. 25 students during two semesters met for two hours each week and were required to post assignments on their blogs to

develop their different types of writing (narrative, comparison, contrast and argumentative writing). Results revealed that students were enthusiastic but were not motivated to engage voluntarily in blogging.

Armstrong and Retterer (2008) examined the use of blogs and its effect upon students' writing ability. Students published blog posts twice a week; this improved their writing ability and found the posting motivating and comfortable. Further, Ducate and Lomicka (2008) found that students saw blogging as an relaxing and enjoyable activity. They also saw that writing comments on blogs increased their confidence. Finally, Sun (2010) examined integration of blogging to a teacher education programme in Taiwan. The results indicated that pre-service teachers doing Master`s level study in teaching English found blogging beneficial in foreign language teaching and that it was encouraging and motivating, particularly for knowledge exchange and self-expression.

Social networking

In language teaching and learning, there is a lack of research about the effect of social networking, so the recommendation for instruction and curriculum integration are yet unknown. The technologies that support online communication are always assumed to have potential for education. Boyd and Ellison (2007) defined Facebook as “a popular website that allow users to interact and collaborate within a pre-defined virtual community” (p.218).

Similarly, Aydin (2013) has suggested that “in fact, an ideal interaction with students on social networking sites is a gateway to social and cultural learning within a constructivist environment, improving language-learning experiences and learners’ cognitive development” (p 160).

Meanwhile, Kabilan, Ahmad and Abidin (2010) investigated the use of Facebook as an online environment for English language learning with 300 students in Malaysia. Using a convenience sample, a survey was carried out and findings of the study revealed that students found that use of Facebook did facilitate English language leaning. In a further study, Jones (2015), taking a

qualitative approach, explored Welsh learners' practices in social media. The findings showed that social media had the potential to provide resources for and generally support minority language learning communities. In this study the learners' practices differentiated according to their levels, beginners used social media in the Welsh language for listening purposes whereas advanced learners' created their own communities to share resources. Other studies include Lantz-Andersson (2018), which looked at the use of social media for language play and its role in emerging socio-pragmatic competence. It is a particularly interesting study as it explored learners' linguistic activities through a socio-cultural perspective and focused on a collaborative project among secondary schools in Colombia, Finland, Sweden and Taiwan. The authors reported on the various linguistic repertoires associated with the informal space. Taking a wider remit, Li (2017) explored the use of Wikis, forums, and blogs to facilitate collaborative writing in English language teaching.

The extensive use of social media and social networks for the promotion of collaborative work and for digital skills practice to improve linguistic proficiency has shown how language teaching and learning can benefit from more collaborative at times informal approaches to learning a language. However, and in spite of all these benefits, educators are often reluctant to support learning outside the classroom sometimes as they see it as crossing social boundaries (Lomicka and Lord 2016) . In addition, as Shelton (2017) found in looking at why university lecturers were reluctant to use the social media like Facebook, many teachers with mixing work and family life and the consequent pressure this puts on their free time.

Providing feedback

Using technology to provide feedback allows teachers to speed up feedback provision which encourages greater engagement of students. Within ICT, environment feedback takes different forms. In early applications, feedback in language teaching belonged in the traditions of behaviorism. Feedback was a correct-or-incorrect response (Salaberry, 2001); this type of

response is very limited as a recipient would not be getting feedback on errors. The capacity of technology to provide feedback and its use can be seen in early examples; for instance, the telephone was used to give feedback on students' progress via phone call (Twarog and Pereszlenyi-Pinter, 1988) as discussed earlier in the review.

Thus, giving individualized feedback can be found in early implementations of CAI (e.g., PLATO system). CAI could give immediate feedback and immediate explanation of errors (Church, 1986; Salaberry, 2001). Church (1986) argued that "computer control of presentation and evaluation of exercises allows teachers to give students much more of this valuable practice in a highly efficient mode without hours of drudgery correcting the exercises" (p.256).

However, CAI programmes were themselves limited. Nagata (1993) claimed that CALL programmes provide 'canned feedback' especially if the learner's response matches with a machine-stored correct or incorrect version of patterns. Based on her research findings, Nagata (1993) proposed "traditional feedback may be as good as the intelligent feedback for helping learners to correct word level errors (e.g., vocabulary and conjugation errors), while intelligent feedback may be more helpful for understanding and correcting sentence level errors (e.g., particle errors)" (p.337).

Zhao (2003) in meta-analysis presented the ways of providing feedback under the following headings: computer-based grammar checkers and spell checkers; automatic speech recognition technology; as well as tracking and analyzing student errors and behaviors. The review of the technologies shows that they provide more relevant and useful feedback (see Zhao, 2003).

Grammar checker

Two of the more recent innovations include grammar-checkers. As a tool, they are very useful for second language learners to resolve writing problems. For example, Jacobs and Rodgers (1999) compared the use of the Microsoft grammar checker with the use of grammar books and dictionaries. 42 students taking business modules participated in the experiment. Students were

divided into two groups; the experimental group had a training session on the use of grammar checker, while the control group did not have access to a computer grammar checker but instead, they used grammar reference books. Both groups showed comparable performance and accuracy. Based on the experiment, the author recommended the usefulness of the targeted grammar checkers for foreign language learners that might be different from native speakers.

However, one early study showed an interesting result in the use of a grammar checker with Taiwanese students. Chen (1997) examined the link between computer-generated feedback and changes in students' business writing strategies. In this study, the students who got electronic feedback improved their writing output compared to the students who did not receive computer generated feedback. However, students who received written detailed feedback showed improvements in their writing strategies. She concluded that students receiving computer-generated feedback improved their ability to independently edit errors and employ different strategies whereas, students that did not receive this type of feedback reduced their errors by copying from reference material, but failed to employ proofreading and redrafting strategies (Chen, 1997).

Computer-assisted pronunciation training

In traditional instructional settings, the human instructor can make use of a range of modalities (speech, vision, gaze, and gesture). However, there are issues with human instructors whether they are a native speaker or not. For instance, feedback provided by a non-native speaker instructor in foreign language learning might not be reliable for a student developing their pronunciation while native speakers might not have the subject background to explain pronunciation clearly. Computers, on the other hand, can assist by providing feedback in some respects, by recording and replaying speech, analyzing learner's speech and comparing it to a native speaker. Mostow and Aist (1999) suggested three ways of providing feedback, this included: visual feedback (displaying movements of the tongue compared to native speakers

while students produce sounds); template-based feedback (comparing student pronunciation with prerecorded templates); and model-based feedback (evaluating student pronunciation against pronunciation models).

Hirata (2004) assessed the efficacy of a pronunciation training programme with a native English speaker acquiring Japanese pitch and durational contrasts. Kay Elemetrics' CSL-Pitch programme was used to help learners practise Japanese words, phrases and sentences shown on a computer screen. The experimental group of students were compared to a control group who did not access the training programme. Findings showed that the experimental group improved significantly in pronunciation perception as well as in pronunciation production.

Asynchronous and synchronous communication forms can also offer opportunities to provide feedback on learners' output. In one quantitative study, message boards were used to give feedback. Ware and O'Dowd (2008) explored the impact of feedback on language development. 22 post-secondary learners of English and Spanish students provided peer-feedback in e-tutoring sessions. The findings revealed that students valued the feedback, but the authors suggested that feedback needed to be better designed as an integral part of student's communication.

Motivation

Many references that have already been mentioned earlier in this review also illustrate ICT in having a positive effect on learners' motivation. For example, Golonka et al. (2014), as discussed earlier, saw that students were motivated when extending their involvement in learning English. The study demonstrated that providing access to a target language community can motivate language learners as it found that students were motivated when there was increased interaction with native speakers.

In the literature, several technologies, such as the telephone, television, films, video, CAI, CALL, social networking, blogs, CMC and chats, are seen as motivating, perhaps for the reason that these audiovisual media technologies are novel (Clarke, 1918). Telephone-assisted language

programmes and the use of the telephone in a classroom setting was found motivating too as it led to stimulating communicative activities (Buscaglia and Holman, 1980; Twarog and Pereszlenyi-pinter, 1988a; Twarog and Pereszlenyi-pinter, 1988b). Television, films and video were considered as an inexpensive tool that provided access to authentic voice, and better understanding of the cultural context which thus increases motivation (Gottschalk, 1965; Svensson, 1985; Lutcavage, 1990; Hennessey, 1995; Baltova; 1999; William and Thorne, 2000).

The emergence of CAI and CALL witnessed an improvement in computer programmes for second language learning by several researchers (Fletcher and Atkinson, 1971; Hitschmann Rudolf, 1987; Keller, 1987; Orndorf, 1987). However, these programmes were unable to maintain motivation as they failed to satisfy communicative needs of modern language learners.

Technologies that support communication opportunities, such as asynchronous and synchronous tools, were associated with the enhancement of self-regulated learning and motivation. Synchronous communication was considered motivating because it was seen as a relaxing, enjoyable environment (Beauvois, 1997; O'Brien and Levy, 2008; Sykes, 2008; Blake, 2009). Asynchronous interaction was characterized as collaborative and learner centered (Tella, 1992; Warschauer, 1995; 1998; Kern, 2000) but because of delays in responses, it was found less motivating.

Finally, blogging was also described as beneficial because it increased motivation towards the target language due to the interaction and feedback from friends and teachers (Ducate and Lamicka, 2005; Lin, 2013; Kung, 2018).

Meinhof (1998) claimed that MFL teaching has not benefited from technology use as expected, and this might be due to a failure of using technologies in an appropriate way. A lot has gone on since then, but motivation remains an issue.

Summary

This review explores the use of different kinds of technology in language education to improve teaching and learning, as well as the focus of the interventions in recent years. There are several big ideas. One is access to authentic material. Technology seems to have important benefits in terms of access to target language, and if the use of technology only allowed such access, its impact would be startling. However, there are other advantages too. Technologies can create opportunities to communicate both in and out of the classroom. This has been taken for granted now that language learners can communicate with one another in varied forms across time and distances which was unimaginable in the past. Technology has other advantages including allowing extensive practice of the target language and experience of the cultural context.

Evidence suggesting that up-to-date technologies can be used in all areas of language learning and teaching to improve specific skills. This has led to some careful explorations in terms of sample size, level of students, time constraints, learner engagement, types of material and technology attributes.

Almost all of the literature reviewed found that students found technology motivating and enjoyable, but to what extent this led to a sustained increase in motivation is uncertain. However, many studies also showed that the use of computer-assisted instruction (in terms of improving various language skills) were just as good as traditional teacher instruction.

There is a reoccurring issue around technology in that it often seems troublesome for teachers to integrate technology into learning. As with the early history of technology, researchers have a great deal of enthusiasm, but more realism is often needed.

In conclusion, as seen in this review, technologies can create meaningful opportunities to access material, communicate, record speech, improve pronunciation, and receive feedback from peers, teachers, and others. Looking back throughout the history of technology and implementation in

foreign language teaching, technologies have had a substantial influence in all aspects of language education.

Chapter 3: Methodology

Introduction

In this section, I focus on methodology and justify the type of case study used in this thesis and the reasons for choosing the particular methods used within the case study. The chapter has three main parts where in each I describe each data collection I used in this current study (survey, observations and interviews). In describing each data collection method, I describe the nature of the sample that I used and give an outline for the data analysis.

However, first, I shall describe the aims of my main study, the main research question and my philosophical position before exploring the study approach and design chosen in this current research.

The aim of the research

This study is aimed at exploring language teachers' reported use of ICT in their teaching at a university in Almaty, Kazakhstan. The study also aims to examine the factors, which encourage or discourage Kazakh, Russian and English language teachers' take-up of ICT, and to consider these factors through the lens of ecological theory. This is an under-researched area, and the take-up of ICT has not been well theorised, so I hope to fill this gap in research literature.

The main research questions

The main research question is: Why do language teachers use or do not use ICT in an HE setting?

RQ1. To what extent do language teachers (and groups of language teachers) use ICT in teaching at the target university in Kazakhstan?

RQ2. What do language teachers see as the benefit of using ICT and what helps them to use it?

RQ3. What constraints do language teachers face in using ICT?

RQ4. What are the consequences of using ICT for language teachers?

This study reports on teachers' use of ICT and draws attention to the wider system in which their choices are made. Having planned the research questions, the next step is to find the most appropriate methodology to achieve the best results.

The Mixed-methods approach

Research design

Identifying the philosophical stance about the nature of reality (ontology) and the theory of knowledge (epistemology) is important because these will influence the paradigm of research. Creswell (1998) described that a research design is “a plan or proposal to conduct research, (it) involves the intersection of philosophy, strategies of inquiry and specific methods”, and more importantly, the nature of the research questions identifies the context of the study.

The ontology and epistemology of the study

The general aim of the study was to develop an understanding of teachers' ICT use and how they saw the wider context in which their decisions to use ICT were taken. At times, this led me to access 'objective' data about the context. Examples of this type of 'objective' data include: the management structures, the way higher education is formally organised and in relation to teachers, as well as how often and when teachers use ICT, even if this is self-reported. I also observed some teachers to gain a better picture of their context. However, I was particularly concerned in how the teachers perceive the context; thus, I attempted to achieve an understanding of how they see their world, which is an interpretivist aim. Interacting with them, I was able to interpret their perception of the phenomenon of ICT use. The interpretivist epistemological assumption is that people construct and interpret their reality (Maxwell, 2009; Mertens, 2010).

In terms of paradigm, my research belongs to a mixed-methods approach, not simply because different methods are used but because it aims to pragmatically describe the phenomenon (behaviour regarding ICT use) and understand perceptions of that phenomenon. This belongs to a pragmatic tradition as explained by Johnson and Onwuegbuzie (2004). According to Johnson and Onwuegbuzie (2004), the aim of mixed methods research is to draw from the strengths of a range of particular methods due to the understanding that a single method by itself cannot do everything.

Case study approach

My study involves a case study of the use of ICT in the language faculty of a university in Kazakhstan. A case study is generally an in-depth study that is bounded in time or space. It generally seeks to uncover questions of why and how (Yin, 2009). In the case of this study, I wanted to know why language teachers use or do not use ICT along with the consequences of their actions and to understand how teachers saw their world in a wider ecological system. ICT use cannot be investigated as a contemporary phenomenon separately from the environment in which it is placed. I also wanted to access data on how often they used ICT and to gain first-hand knowledge of the context in which they worked by talking to course leaders and heads of department, and by observing a small number of lessons. One of the reasons for choosing a case study approach was that it provided an opportunity to focus on events happening in the current time and place. Another reason was that case studies are taken “to explore in depth a program, an event, an activity, a process, one or more individual” (Creswell, 2009, p.13). Yin (2009) suggests that a case study can be an appropriate methodology for researchers who tend to study “contemporary phenomenon” within real life contexts.

The research objectives clearly require data collection from multiple ways such as: questionnaires, interviews, and observations of classroom practice. Hence, when thinking about methodology, having a number of foci is important to take into consideration.

Case study design

Yin (1994) classified case studies as a single case or multiple case study which can be holistic or embedded based on design, number and according to type: explanatory, exploratory, and descriptive. A single case study design looks at one phenomenon or one context whereas a multiple case study looks at more than one. However, the difference is not always clear. My study was conceived as a single case looking at the single phenomenon of ICT use in a single university. However, within this single setting, there were different patterns of activity, access to resources and perceptions of technology. For example, in the interviews, I could see differences between the culture of English, Russian and Kazakh language teaching and different levels of resources. A recurring theme was that Kazakh teachers had lower access to resources, including physical books and Internet sites. I explored these differences at length in my findings but treated them as sub-contexts within the main single case study.

I could have carried out a multiple case study using two or more universities. For example, I could have compared a private university, in which there are often greater technology resources, to this case of a state university. This would provide valuable insight but was impossible to carry out due to time constraints.

Cases are generally defined as representative (i.e., key case) or unusual (i.e., unique) cases. My case study site is representative of more traditional universities in Kazakhstan with its high number of students and large number of language teachers. I put forward the idea that this university shares many of the issues of other post-Soviet countries e.g., Lithuania, Poland and Estonia, which face similar challenges such as adapting to the Bologna accord, resources and changes in cultural practices (Bileviciute et al., 2019). In terms of ICT facilities, these state universities are often less well equipped than new private universities.

As for the holistic and embedded case designs, they both have their own advantages and disadvantages. The holistic design looks at the context and tries to explain the wider context

from multiple stakeholders, whereas an embedded design looks at the actions, the phenomenon and events in detail without the same concern for presenting the context. My concern for understanding the context made my case study a holistic design.

As previously stated, case studies can be classified into: explanatory (understanding real-life events), exploratory (exploring events with no predetermined framework) and descriptive (describing events within a rich real-life context) (Yin, 1994). Explanatory studies are generally more top-down (e.g., explaining whether hypotheses work in a particular context) while descriptive studies are more bottom-up (e.g., following the data to where it leads). My study is neither top-down nor bottom-up. I developed some ideas about the context but made no formal hypothesis. My research led to new models (i.e., explanations); however, at times it was exploratory (e.g., looking at new ways of ICT take-up) while at other times it was descriptive (e.g., describing lesson observations).

Research activity schedule

This study investigated language teachers' use of ICT in HE, Kazakhstan. Table 1 below presents a timetable for research activities. As seen from the table, the study started in September 2017 and went as followed: a literature review, design of research methods for the case study approach, a pilot study, main study data collection, analysis and presentation of findings, discussion of findings, and completion of thesis for submission.

In order to gain a wider view of the use of ICT, it was important to start with a literature review. This helped me understand more about language teachers' perceptions of ICT use and to obtain knowledge of ICT enablers and disablers in general. I also learned about the value of ICT for language teaching as a benchmark for ICT integration. Reading gave me the confidence to pose research questions and select methods to address those questions. A mixed-methods approach was taken as a consequence. This led to the collection of a great deal of data.

First, a pilot study was conducted in June 2018. Conducting a pilot study helped me to check for any ambiguity in the questionnaire that was to be used in the main study and led me to make small changes. The data collection took place between November 2018-September 2019. Data collection took place over three phases. This was because of a shortage of time given for fieldwork by my funding body (which was two weeks). The first phase started in November 2018 with the distribution of questionnaires to 300 language teachers where 97 completed questionnaires were returned. The second phase involved the distribution of questionnaires to Russian language teachers as well as the conducting of some interviews that took place over Skype in May 2019 until mid-June. September 2019 was the start of the third phase which involved 12 interviews (eight language teachers, two managers, and two deans) as well as seven observations of lessons. During this period, questionnaires were distributed and completed. The data was analysed by aggregating the data and breaking it down into demographics, teaching experience, and age factors. In terms of interview, thematic analysis was used. Observation data was conducted using a semi-structured schedule with flexible headers for note taking. The analysis took place over a further three phases. Phase one involved analysis and the reporting of survey results which started in June until September 2019. This helped me to select participants for an in-depth interview. Phase two involved analysing and reporting the observation results; this took between October 2019 and January 2020. Lastly, phase three involved the analysis of all the interviews; this process took between February to June 2020. The final thesis was completed at the end of June 2021.

Table 1: Research activity schedule

Date	Activity	Description of activity
September 2017-January 2018	Literature review	Reading ICT related articles in order to understand debates around the use of ICT in HE and contribution to language teaching.
February-May 2018	Designing case study research	Developing research questions and reading research methods in Social Science to

		identify appropriate research methods.
June-September 2018	Pilot study	Questionnaires for the pilot study were administered electronically with the help of personal contacts in the case study university, N=8 (two male and six females). The interviews were conducted with three of the teacher respondents.
Phase 1. November 2018-January 2019 (survey) Phase 2. May 2019 (the second phase: distribution of questionnaire to Russian language teachers and interviews) Phase 3. September 2019 interviews and observations	Main study questionnaire, interviews and observation	Collecting data for the main study Survey Phases1: Printed copies of questionnaires were distributed among 298 language teachers; 97 returned. Phase 2: Questionnaires were delivered to Russian teachers, 36 returned. After the second cycle there were 133 completed questionnaires. However, 22 were later discarded as they were substantially incomplete. Total survey sample, N=111. Observations (n=7) Interviews The first Skype interviews were carried during phase 2 and phase 3. Interviewed teachers (N=16), managers (department leaders) (N=2), deans (N=2), IT support (N=1)
Phase 1. June-September 2019 (Questionnaire analysis) Phase 2. October 2019- January 2020 (Observation analysis) Phase 3. February-June 2020 (Interview analysis)	Analysis and reporting of results from questionnaires, observations and interview.	Findings organised sequentially: survey results; observations and interviews.
September 2020-December 2021	Discussion of findings	Research questions were addressed compared to the wider literature.
February 2021-June 2021	Writing up	Re drafting all parts of the thesis for submission.

Data collection methods

In this research, different data collection methods were combined. Creswell and Clark (2011) described mixed methods as a research design with philosophical assumptions that enables qualitative and quantitative approaches to be combined. Mixed methods guide analysis as well as methods of inquiry. Thus, this research aimed to provide descriptive and objective measures of the phenomenon, and to understand the perceptions of actors (Hammond and Wellington, 2013).

Qualitative and quantitative methods have been debated and through this, their limitations were exposed. Using a combined approach provide insights from both methods into a workable solution (Johnson and Onwuegbuzie, 2004). Creswell (2009, p.15) stated that when “recognizing that all methods have limitations, researchers felt that biases inherited in any single method could neutralize or cancel the biases of other methods”. For these reasons, a mixture of qualitative and quantitative data collection methods will be used to address each research question.

Although there are many benefits of mixed methods which have already been discussed, there are also limitations to this method as well. One of these is that it is not always possible to use more than one method. For example, if a study involves a sample with low levels of literacy, interviews would be more appropriate and suitable to use compared to surveys or questionnaires. Therefore, mixed methods are not always needed as in this circumstance, the quantitative method would not be useful. Additionally, a certain method may be used ineffectively, making the mixed methods approach, again, fruitless – for instance, if a focus group is set up but participants is not given enough time to provide answers in depth. This raises another problem in that not all the researchers have skills in both quantitative and qualitative methods. Of course, this brings forth the argument of allowing inexperienced researchers to gain skills in a particular method, but ultimately, if time is scarce, this experience may prove fruitless.

Table 2: Research questions and data collection methods

Research questions	Research instruments
Why do language teachers use or do not use ICT in an HE setting?	Questionnaire, Interview, Observation
To what extent do language teachers use ICT in teaching at the target university in Kazakhstan?	Questionnaire
What do language teachers see as the benefit of using ICT and what helps them to use it?	Questionnaire and Interview
What constraints do learning teachers face in using ICT?	Questionnaire and Interview, Observations
What are the consequences of using ICT for language teachers?	Interview, Observation

Creswell et al. (2007) identified four major types of mixed methods designs, based on the classification system offered by Greene et al. (1989). The four major mixed methods design-types are as follows: the triangulation design, the embedded design, the explanatory design, and the exploratory design.

The triangulation design is a concurrent design in which quantitative and qualitative are collected and analysed in one phase. Equal importance is given to both methods by combining the strengths of both. This design is popular even though it has its own challenges. It needs sufficient time, resources, and expertise in both methods to be implemented at the same time. Also, research procedures have to be planned effectively so that the methods tackle similar themes, otherwise the two datasets will not be comparable.

The embedded design is used when one type of data is given less emphasis (Creswell,2003). In an embedded design, both methods are mixed at the design level. For example, qualitative data is used to enhance and as a supplement to quantitative data, perhaps in order to explain a relationship or process. The implementation may be in a sequence or is concurrent, meaning that the method with less emphasis may occur before, during, or after quantitative intervention or data collection (Creswell, 2003). The advantage of the embedded design is that it is manageable

in terms of time and resources. A challenge is that decisions have to be taken regarding sampling and when to collect the supplementary data.

The explanatory design has two phases where both methods are implemented sequentially; this involves the collection and analysis of quantitative data, followed by subsequent collection and analysis of qualitative data. The qualitative phase derives from the results of the quantitative data. Quantitative data is given greater emphasis, but the final interpretations are drawn from both sets of data.

The exploratory design is similar to the explanatory with it having a two-phase mixed methods design. However, this design starts with collecting and interpreting the results of qualitative data followed by quantitative collection and analysis. Greater emphasis is given to the qualitative method as it is well-suited to identify, test, or to measure quantitative data variables or to develop an instrument. The challenge of this design is that it requires a lengthy time to complete both phases.

There are two key issues here. The first is the timing of the data collection and data analysis, i.e. whether it should be concurrent or sequential. As discussed above, concurrent timing often implies the use of triangulation and some embedded designs. Sequential timing is more associated with explanatory and exploratory designs. The order of the timing mostly depends on the study. Creswell et al. (2009) have identified three approaches to analysis: merging the data, embedding the data, and connecting the data. Merging two sets of data results occurs in triangulation and involves comparing and contrasting. Embedding takes place when findings of the secondary data is interpreted within the frame of a bigger dataset, for instance, embedding quantitative data within a qualitative design, such as a case study in which descriptive statistics are incorporated. Connecting data results is commonly used in explanatory and exploratory designs. The connection happens, for example, when results from two data sets are interpreted

together in discussion or when quantitative data analysis is used to inform the collection of qualitative methods.

In my study, the collection was at times sequential (the first phase was solely focused on the survey), but later the data collection was also concurrent so that a second round of questionnaires and the first round of the interview data collection happened at more or less the same time. The final collection was also concurrent as it involved collecting more interviews with respondents and observing lessons at the same time. Sequential data collection gave me the advantage of identifying interviewees that were willing to take part in observations, as this was one of the questions of the prior interviews. However, overall, the order of data collection was governed by the very tight timetable, I had little choice but to collect different kinds of data during roughly the same period.

In terms of analysis, the approach was sequential. There was a definite sequence as I dealt with first, the quantitative data, then observations, and then interviews. The reason for this was to be pragmatic. Each method pushed me in developing my expertise with relevant research methods and I needed to give each new approach my undivided attention.

Another way to think about the mixed methods approach is in terms of balance between methods and number of methods. For example, does one method have precedence over another? In this study, the balance is in general, evenly balanced between questionnaires and interviews; the observations form less of a contribution to the study, but it is still important and involved extensive data collection and analysis.

In summary, my approach can be described as a largely sequential study, with a balance between qualitative and quantitative methods. As discussed earlier in respect to the study being a case study, it is explanatory and exploratory.

I will now discuss three methods used in this study survey, observation and interview.

Survey

I outline what a survey can provide in a research context before describing my journey in creating a questionnaire for the current study. I reflect on the design of the questionnaire and what I have learnt from pilot study. I also, describe the phases taken to design the survey as well as procedures including data analysis and data representation.

To answer the main question of the study, a survey approach was adopted in the initial stage and a questionnaire was designed to provide a broad picture and obtain information about language teachers' use of ICT.

A survey design provides “a quantitative or numeric description of trends, attitudes, or opinions of a population by studying a sample of that population” (Creswell, 2009, p.143). For this reason, my questionnaire covered language teachers' ICT use, their attitudes towards ICT, how they perceived ICT as benefiting to teaching and learning, as well as encouraging and discouraging factors at micro, meso, macro levels. The questionnaire items were divided into sections covering demographic factors including gender, age, teaching specialism (Kazakh, Russian, English) and teaching experience. Other sections addressed language teachers' ICT skills, their general knowledge about ICT, as well as encouraging and discouraging factors. The final section included system level or questions regarding to factors beyond the institution. The full questionnaire is provided in Appendix B and a summary of the questions in relation to the research themes is provided below in Table 3.

Table 3: Research questions and summary of the questionnaire questions

Research Questions	Questions from questionnaire	Format of the questions
	Demographic background: What is your gender? What is your age? What is your teaching specialism? What is your teaching experience?	Responses were nominal (two or three categories).
To what extent do	Teacher level questions	Five-point Likert

<p>language teachers use ICT in teaching at the target university in Kazakhstan?</p>	<p>Use of ICT: I prepare lessons with the help of ICT. I use the Internet to prepare my resources. I use Power Point or other presentation software in my lessons. I use the Intranet to send course information to students. I use a mobile phone to contact students about lesson issues. I send and receive students` work by email. I use the CD-ROM that comes with the textbook in class. I ask students to use CD-ROM at home. I use IWB(Interactive White Board) in lessons. I recommend students to use testing and revision online resources (e.g., quizzes, presentations). I encourage students` ICT use out of class (e.g., discussion forums, blogs, wikis)</p>	<p>scale was used here.</p>
<p>What do language teachers see as the benefit of using ICT and what helps them to use it?</p>	<p>Teacher level section: ICT enables my students to be more engaged. ICT helps students become more independent learners. My teaching is more interactive using ICT. ICT helps my lessons to be more student centered. I am expected to use ICT in teaching.</p>	<p>Five-point Likert scale was used here.</p>
<p>What constraints do language teachers face in using ICT?</p>	<p>Institutional level questions section: I have access to computer support when I need it. There are usually no computers in my teaching room. There are usually no computers in my teaching room. It is difficult to book ICT equipment for language learning and teaching;I am a reluctant user of ICT. I find it difficult to use ICT in my teaching; to use ICT in class takes a lot of time. ICT distracts students. Have you ever attended any long CPD (Continuing Professional Development)</p>	<p>Yes/No binary responses</p>

	courses on using ICT for teaching and learning (e.g., a week, a month programme)?	
	Beyond the institution level questions: There is little government backing for the use of ICT in language teaching and learning. I cannot use ICT following the present curriculum. ICT has led to big changes in the way language teachers teach languages.	Five-point Likert scale were used.

Design of the questionnaire

The design of the survey went through several phases.

During the first phase, I initially wanted to explicitly organise questions around micro, meso and macro factors, but this proved too complicated. For example, respondents did not need to know that items such as ‘I prepare lessons with the help of ICT’ or ‘I use the Intranet to send course information to students’ were micro level items. I also realised, later on, in this first phase, that my questions were ambiguous, e.g. ‘Do you use computers a lot in your teaching?’; ‘What does ‘computer’ mean?’; ‘What does ‘teaching’ mean?’ These questions would be difficult for respondents to answer due to their vagueness.

So, in my next phase, I studied different questionnaires in the literature and discussed one that my supervisor had used in the past. I realized from this discussion that rather than asking a general question – for example, ‘do you use ICT a lot or a little?’) – I could ask several questions about different kinds of behaviours related to the frequency of ICT, e.g. ‘I recommend students to use testing and revision online resources (e.g., quizzes, presentations).

From this, the questionnaire that I ended up developing was based on existing questionnaires that my supervisor had used with primary and secondary school teachers to understand their use of ICT, and beliefs (Hammond et al., 2011). By using this, it gave me a questionnaire template that had already been tested for reliability and face validity as it drew on previous questionnaires within a NFER survey of in-service teachers (NFER, 2008) and the section of pedagogy used which was developed by Snider and Roehl (2007). The reason why I simply did not use these

already-developed questionnaires was because they were produced a substantial amount of time ago, and ICT has changed significantly from then. In addition, many questions from those surveys were irrelevant to my study and made the questionnaire too long, so I removed these questions (in particular, a long section regarding beliefs) to reduce complication and time and adapted other questions to fit the context of a HE setting.

The final questionnaire addressed the first two research questions of which regarded language teachers' perceptions of ICT use and to what extent ICT was used among language teachers. For this reason, the questionnaire was broken down into major themes: personal characteristics, training, ICT skills, ICT use, attitudes to the use of ICT, access to ICT, and beyond the institution. The questionnaire focused more on teachers' attitudes and behaviour, but it also explored institutional issues as well as issues beyond the institution.

Any response rate can be influenced by both visual appeal of the survey and the ease of with it can be answered, so the questionnaire was designed within clear sections with easy-to-use ticking boxes. Additionally, the questionnaire was translated into three different languages, keeping in mind teachers' language preference.

Pilot survey study

Before the main study, I carried out a pilot of the questionnaire. The use of a pilot is essential, and Cohen et al. (2007) pointed out several advantages of piloting which are 'to increase the reliability, validity, and practicability of the questionnaire' (p. 34). Wellington (2000) noted the importance of piloting such that questions can be developed from prior research, but piloting should always be considered. My pilot study was conducted with English, Russian and Kazakh language teachers, two male and six females from the target population. The findings showed that these teachers had different levels of teaching experience and four of them were under the age of 35, two were between 36-49 and two of the respondents were over 50. The questionnaire was presented in three different languages. The purpose of piloting the questionnaire was to

establish any flaws in the survey so that they could be addressed before they were sent to the recipients in Kazakhstan for the main study.

Questionnaires were sent to a colleague of mine in the case study university by email who then distributed them to 20 teachers. The eight completed questionnaires were returned, and the findings were analysed by using descriptive statistics within SPSS. I also obtained a value for Cronbach's alpha. I followed up by interviewing three of the teacher respondents. Those interviewed were of different ages, two males and one female, who taught English, Kazakh and Russian respectively. I wanted to know whether the questionnaire was clear and to check on the translation into the three different languages. Teachers agreed to be interviewed as they understood the personal importance of the research.

What I learnt from the pilot survey study

The reliability of the questions was tested by inter-item correlations measured by Cronbach's alpha coefficient (Cohen et al., 2011). Cronbach's alpha was calculated using SPSS. The results revealed that the questionnaire had an acceptable alpha coefficient (see Table 4).

Table 4: Reliability of the pilot study

Theme	Number of items	Cronbach's alpha
ICT training	3	0.659
ICT use	10	0.877
Attitudes to ICT	8	0.668
Access to ICT	7	0.719
Beyond the institution	3	0.621

The idea of Cronbach's alpha is that questions asked on a similar theme should trigger generally consistent answers. At times, this means that all questions need to point the same way. The questionnaire showed a high level of consistency, albeit items E2 and F2, F3, F7 needed to be inverted. The ICT training was lower because one of the questions was Yes/No response, whereas the rest was answered using a Likert scale.

So, the first thing that I learnt from the pilot was that there was an acceptable level of consistency within my questions. Secondly, the questionnaire was clear and comprehensible, which was something that I learnt from talking to the respondents. Third, I learnt to use descriptive statistics in SPSS to calculate frequencies. However, some changes needed to be made. The teachers' feedback allowed me to improve the questionnaire and to develop the final draft. As a result of the piloting, a repeated question was removed, and two minor changes were made. Every question had been checked for clarity. Getting feedback from teachers with different backgrounds and specialisms gave me the confidence to believe that the questionnaire was likely to work with the other teachers. Such minor changes were made to the questionnaire that the data the pilot survey was combined with that of the main study.

After the discussion, a questionnaire draft was proposed and sent to my PhD colleagues` (n=3) who were teachers in different countries for further review. Comments and suggestions were received of which were duly considered. While I am proficient in the languages of English, Russian and Kazakh, the English questionnaire was translated into Russian and Kazakh under the consultancy of three professional language teachers to ensure clarity and consistent language structure.

It was decided that the questionnaire was to take a hard copy format, considering the visual appeal of the survey and the ease of which it can be answered; the department also advised that a physical questionnaire would be better, as opposed to an online questionnaire. This was because the questionnaires were more likely to be filled in if delivered by hand and picked up by hand from respondents. Taking time into consideration, the questionnaire was designed to be completed through the use of tick boxes.

The questions were organized into sections:

The characteristics sections covered:

- Gender

- Age
- Teaching experience
- Teaching specialism

Responses were nominal, meaning that the respondents could pick out of two or three categories, depending on the questionnaire item. For example, the item ‘What is your teaching specialism?’ could be answered by ticking either ‘English language’, ‘Russian language’ or ‘Kazakh language’. These were designed in order to investigate patterns in responses. For example, male teachers may have a differing perception about ICT use compared to females; likewise, someone who has been teaching one of the languages for a number of years may have differing attitudes towards ICT use to that of a newly qualified teacher. Another question that had importance when designing the research was whether teaching in Russian, Kazakh or English specialisms might have an impact on ICT take-up.

The next section was about ICT training, and it covered questions of long or short CPD (Continuing Professional Development) courses. They were to be responded using Yes/No binary responses.

There was then a third question on whether the respondent had a computer, which I later realized did not fit the section and I ignored it, as it happened to be 99%.

The subsequent section was about ICT skills, and it inquired to what extent teachers were competent in ICT use. There was one question with three responses: reluctant, reasonable, and confident.

The following section was about ICT use and covered ten questions: two questions about preparing lessons; three were about using ICT for communication; three questions were about using ICT in lessons; and two questions were about how far respondents encouraged students to use ICT. The responses were answered using a five-point Likert scale with categories starting from Never, Rarely, Sometimes, Often, and Always.

The next eight questions were about teachers' attitudes: two questions about time and ICT, (one question was inverted as a reliability check), one question was about expectations, four questions were about the impact of ICT in teaching and learning, and the last question asked whether respondents would like to use ICT more. The responses were in the form of a five-point Likert scale with a grading of Strongly disagree, Disagree, Neither agree nor Disagree, Agree, and Strongly agree. Attitudinal questions were a mixture of positive and negative statements with an aim to understand language teachers' attitudes to ICT take-up.

The next section consisted of seven questions: four questions were aimed to understand the accessibility of ICT in teaching rooms, one question regarded the accessibility of ICT in offices, and the other two questions were about support and booking of ICT equipment. The responses were binary Yes/No tick boxes.

The final section asked questions about ICT beyond the institution and covered government backing as well as curriculum adaptability. The responses were given on a five-point Likert scale with categories starting from Never, Rarely, Sometimes, Often, and Always.

At the end of the questionnaire, there was an opportunity for anyone to input their email if they wished to participate further for the interview part of the study.

Carrying out the survey

Before proceeding with the distribution of the questionnaire, permission was obtained from the Dean of the Philology Faculty. I could not visit the university to introduce myself and the research topic before asking colleagues to fill out the questionnaire; however, the questionnaire itself began with an explanation of my research interest and my background. I had gained my master's degree at the Education department and some administrators knew me, so it was less difficult to get access to language teachers and obtain their willingness to participate. The Vice Dean of the Education department and my colleague working as a teacher at the Journalism department agreed to help distribute the questionnaires and collect them back after completion.

All 298 (88 English, 129 Kazakh, 87 Russian language teachers) were asked to fill in the questionnaires (eight had already completed with the pilot phase). 97 were completed in the first phase. Disappointingly, not as many Russian language teachers completed the questionnaire as anticipated. To address this, questionnaires were e-mailed after a three-month interval in order to increase the response rate. At this point, the Vice Dean of the Education department helped me by sending the questionnaires to Russian language teachers via a mailing group. To support me, the Vice Dean personally explained the importance of the research. By 25 May 2019, a further 36 responses were returned, which made the grand total of 133 completed questionnaires. Later, however, 22 questionnaires were rejected as they were substantially incomplete. It was not possible to further attempt a request for additional responses as the university would be closed for summer break. The first distribution of the questionnaire occurred on November 20th and was collected by January 10th 2019. The questionnaires were handed out to language teachers directly or indirectly in secretariat offices. The second data collection procedure started on 15th of May, and I continued receiving responses via e-mail attachments until the end of May 2019. Thus, 111 questionnaires were completed out of the population of 298. This made an overall response rate of 37%. I was hoping to get a higher response rate, but there comes a point where it is impossible to do anymore. I wonder if I were in Kazakhstan myself, I might have received higher response rate, but I feel it would have been unethical to go to respondents directly. I proposed to offer a small money reward to fill in the questionnaire; however, the department refused. I believed that I did everything I could to make the questionnaire accessible for the participants as I translated the questionnaire into different languages and tried my best to reduce time taken to complete the questionnaire.

Overall, I did what I could. In carrying out a survey method, it is not unusual that some people will not want to complete a questionnaire – they do not have the time, and I understand that teachers are often asked to fill in different questionnaires on a daily or weekly basis, making the

questionnaire not a priority for respondents. 37% is a good response rate, however, and the number is not so important in comparison to whether the respondents are representative. In looking at the analysis, I did believe that response rate of the respondents was generally representative, or at least represented the breadth of teacher characteristics and opinions. For example, I have roughly proportional numbers of teachers from different teaching levels of experience and specialism.

Data analysis of survey data

The data was checked manually (i.e., I looked at the returns to see if they were consistent and filled in correctly) and I discovered that some (22) of the questionnaires were incomplete or did not seem to be filled in properly and I discarded these.

The final set of authentic returns (n= 111) were then entered into the SPSS programme.

Descriptive statistics were automatically generated to establish a pattern in the raw dataset. A dataset, in this context, is the collection of responses from teachers, n=111. For example, the age of participants was shown in both table and graphical form which was then divided into three categories; 'under 35', between '36-49', and 'above 50'; ICT skills were presented under the categories reluctant, reasonable, confident) and Likert scale questions were presented in the form of tables.

The first step of data analysis is used to describe the characteristics of respondents by looking at the average of one variable (e.g., gender, age). In the second step, I looked at the relations between the variables (i.e., gender, age and ICT training or ICT skills). In the third step, I used descriptive statistics to find out the overall frequency of ICT use by summarizing it in tables.

Descriptive statistics were used for the following variables: frequency of gender, age, experience, teaching specialism, access to technology, use of ICT, training in the use of ICT, attitude towards ICT use, confidence in using ICT and the teachers' different uses of ICT.

The frequency of ICT used in teaching and learning contained ten statements. In order to find out the least and the most frequent use of ICT, ten items were summed and were divided by valid responses. However, in order to be able to see the most rated model response (i.e., always or sometimes), they were rated from zero to four. For example, if the most popular response is 'always' then it shows which statements in the list (of the ten items) is the modal response. At this point, I wanted to look into the teachers who use ICT more and those that used IT less in more detail. High, medium, low ICT users were identified by processing the data into an Excel spreadsheet using a "sort" button of the toolbar.

In the fourth step, cross-tabulations was applied to understand the correlations between different variables. Cross-tabulations of categorical data, for example ICT use, was cross tabulated in relation to other variables such as age, teaching specialism, years of teaching experience, skills and access. This was used to gain an understanding of the differences between age groups or teaching specialisms that were significant to the study analysis. In addition, the weighted mean of overall responses was calculated in relation to teachers' priorities of ICT use and attitudes in order to derive categories of high, medium, low use of ICT. Examples of findings showed that the majority of respondents (more than 90%) owned computers, and the Internet was accessed for administrative and teaching purposes in their university classrooms.

One problem in this analysis was dealing with missing data. Although within an individual return, there may be only one or two missing data items, when aggregating responses, missing data can add up and the group size can be significantly reduced. In order to address this problem, I carried out maximization expectation analysis. I was happy that in all of the cases that the imputations were justifiable. For example, there were ten items covering ICT use and if one item was missing then I would impute a value using expectation maximisation. To elaborate, if we consider a high ICT user respondent as an example, if they missed an item of the questionnaire, their missing response can be resolved by their inputting the mean of the nine other items of the

section in replace of it; alternatively, it could be left as it would not make a difference to the overall score.

Nevertheless, I was able to create three groups: a third of teachers (n=37) who represented high ICT users (who scored from one to five), a third (n= 36) who represented medium ICT users, and another third (n= 38) of low ICT users. These groups were then compared to other categories including access, attitudes, ICT skills, and government backing.

Representation of survey data

In presenting the survey data, I started with the tables. I then provided supporting commentaries so that I drew attention to what was significant in the findings. Here, I used terms such as ‘some’, ‘most’ and ‘many’ to explain the tendencies within the data. This made the text clearer and drew out patterns better than repeating the numbers in the table.

Table 5: Representation of percentages

Term	Percent
All, nearly all,	>80
Most / the majority	>60 and <80
Around half / half	>40 and <60
Some	>20 and <40
A few / A small minority	<20

I also redesigned tables from SPSS to make them more reader friendly. For example, SPSS produced a table for question B that included irrelevant data as seen in Table 6.

Table 7 shows a clearer interpretation of the same data by removing the unnecessary columns.

Q: Do you have a personal computer?

Table 6: SPSS table example

Do_you_have_a_personal_computer?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	20	100.0	100.0	100.0

Table 7: Presenting of the table in thesis

Do you have a personal computer?		N=	%
	Yes	20	100
	No	0	0
Total		20	100

I experimented with different ways of presenting my data including charts in Microsoft Excel.

For example, below shows two different charts, both of which describes ICT use; the difference is that Table 8 is made with Microsoft Excel while Table 9 was a table that I made manually. I decided to use the latter as it was easier to read and understand.

Table 8: Example of Excel charts

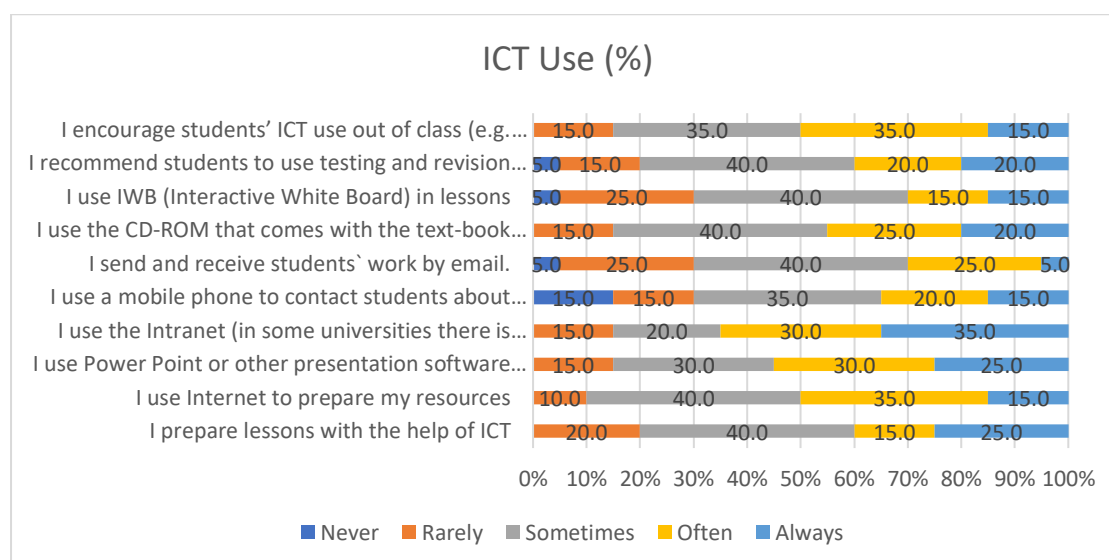


Table 9: Q: ICT use (n=20), data in percentages

ICT use	Never	Rarely	Sometimes	Often	Always
I prepare lessons with the help of ICT.		20	40	15	25
I use Internet to prepare my resources.		10	40	35	15
I use Power Point or other presentation software in my lessons.		15	30	30	25
I use the Intranet (in some universities there is also a portal "Intranet") to send course information to students.		15	20	30	35
I use a mobile phone to contact students about lesson issues.	15	15	35	20	15
I send and receive students' work by email.	5	20	40	25	5

I use the CD-ROM that comes with the textbook in class.		15	40	25	20
I use IWB (Interactive White Board) in lessons.	5	25	40	15	15
I recommend students to use testing and revision online resources. (e.g., quizzes, presentations)	5	15	40	20	20
I encourage students' ICT use out of class. (e.g., discussion forums, blogs, wikis)		15	35	35	15.

Summary of survey data collection

This section has covered: research methodology describing the study as a mixed method approach.

1. Research methodology describing the study as a mixed methods approach, briefly outlining justifications for choosing survey, interview, and observation data collection methods.
2. Description of research activities undertaken in this study.
3. Research activity schedule explaining the concurrent nature of the data collection and sequential nature of the analysis.
4. Description of the survey data collection method.
5. The purpose and reflections of the pilot study.
6. The phases taken to design the survey.
7. The following questionnaire procedures that was involved in carrying out the surveys, i.e., data analysis and data representation.

Observation

This following section of the chapter focuses on the observation data collection method that was used in the study. I explore the different types of observations that are typically used in research and outline their features, advantages, and disadvantages before explaining what type of

observation I chose and why. I describe the procedure in which I as a researcher, I was really interested to observe if there had been changes in language teaching and learning in relation to ICT use over time and was keen to conduct this phase of the project.

Walliman (2017) explains that observations provide an opportunity to witness a real-life situation. This is important because the actions of people may be different from what they say or what they intend. In this study, observations were used as a method to directly capture teachers' actions in their normal working environment. It was used to gain evidence of what they did with ICT, and whether their planning and teaching correlated with how they spoke about ICT. It was also important to get a wider picture in how teaching and learning was organised in the university, for example to see if there were patterns in the way that teaching was organised and in the language that was used in the classroom.

Types of observation

Observations can also be divided between approaches that involve active participation from the researcher (participant research) and ones that do not involve the researcher participation (non-participant research). Participant research might be more natural in an ethnography in which the researcher is deeply immersed in a setting. Non-participant observations are more likely when the researcher is trying to capture snapshots of behaviour. As a student on research leave, I did not have the opportunity to carry out participant observation, due to time and the conditions of my research leave.

Similar to interviews, there are structured, semi-structured and unstructured approaches to observation. In a structured observation, the researcher has a clear focus and gathers data using a tight schedule. For example, if observing discussions within a classroom environment, the schedule might cover how long a teacher and their students spend talking and might code different categories of talk. A tight structure has its advantages, one example being that the observation schedule can be used by other researchers and the focus it gives makes it easier to

collect data and later analyse. A disadvantage of this is that the researcher may miss or fail to record important details if they were not included as necessary by the schedule. There is also a danger of focusing on superficial details in this type of observation and recording what is most obvious or easy to observe, rather than what is important.

The unstructured schedule refers to a technique with no set format which means observing all relevant behaviour without a tight schedule. With this type of observation, there are no predetermined codes; however, the researcher will take notes and analyse the data later. An advantage is that the researcher can generate new ideas and notice things which might have not been considered before. In terms of limitations, the researcher may be easily overwhelmed and therefore miss critical events.

Semi-structured observations are another type of observation schedule that provides frames for observation but is open to how events are recorded. For example, it simply focuses on looking at what teachers do in reference to the topic at hand and how teachers, as well as students, respond in each of the sections of the lesson. A researcher may be interested in the phases of a lesson and use these as a framing. The advantage is that there is a lot of scope for the researcher to capture details with a more objective focus. Its disadvantages are similar to the structured observation where important details can be missed due to the strict schedule.

My approach was semi-structured; I understood what I wanted to observe and how to record it, and while the proforma that I used had a template, I could add additional comments.

Pilot observation

I was unable to go to Kazakhstan and carry out a pilot due to time constraints and because I was expected to be based at the university I worked at the time. I also tried to access language classes at my university but with no success, and so instead, I worked from a lesson that was recorded and uploaded onto the Internet (YouTube) which provided a naturalistic lesson rather than heavily edited one. The lesson involved a teacher teaching an English language class.

Observing this video helped me to develop appropriate skills for the observation aspect of my main study. I developed and tested different types of observation sheets. Reflecting on that experience, I found it challenging to keep up with the flow of the lesson without a structure and as a result, I came up with a template (proforma) for the main study which provided me with a tighter focus. Having discussed the observation difficulties with my supervisor, I decided to leave part of my proforma open so I could write additional notes throughout the lesson observation.

A semi-structured proforma was used to record relevant details of the lesson observations. Table 10 shows the schedule that was used; it describes what kind of information and examples of details that I would record, while Table 11 shows an example proforma of an observation.

Table 10: The schedule of observation activities

N	Theme	Description of activity	Activity (Examples)
1	Layout of the classroom	Initial Information about the setting.	Number of students: 15-20. Location of the desk and chairs. Desks in two rows No projectors IWB the teachers used a marker pen and Whiteboard. Teachers' personal laptop.
2	Flow of the lesson	Record of information on classroom setting and communication between teachers and students	Settling the class. Registration. Warm up activity (10- 15 minutes). Explaining the lesson plan. Checking for h/w (20-25 min)
3	ICT resources used	Use of ICT during the lesson. And how teacher, student referred to ICT in and outside the lesson	Use of CD. Listening to track. the Internet was used. PowerPoint (15 slides) Use of social media
4	Mode of interaction	Additional comments made right after and during observations.	Use of pair and group work: Students worked in pairs. Speaking activities. Students worked in groups.
5	How the interest sustained	Teacher and student role in the classroom.	Checking understanding. Encouraging using friendly phrases (e.g., well done, excellent)

All of the data from observations was collected using the same schedule. The design of the field notes was aimed to observe three main aspects: the use of technology, interaction inside the classroom, and behaviour towards the use of ICT. By observing the interactions during the lesson, it helped to ascertain the kinds of teaching (methods) that were used, and whether the roles of students were active or passive. Observations helped me to reflect on the changes that have occurred over time; for example, I noticed that lessons involved more teacher-student interaction, which was uncommon in the Soviet period where teachers were perceived as omniscient.

Table 11: Pro forma of an example observation

N	Teacher	Layout of the room, teaching context and teaching setting	Flow of the lesson	ICT resources used (environment, applications used, tools)	Mode of interaction	How the interest sustained
1	Teacher of Kazakh, female, experienced (38 years), enthusiastic over ICT.	Teaching setting included five rows of desks with two chairs in each desk. Students were seated in pairs in desks. The class size is very big. There was no IWB and the teacher used a marker pen to write on the whiteboard. There was no projector in the classroom. There were eight students in the class, level of Kazakh language is mixed with pre-intermediate and fluent speakers of Kazakh. There was no computer, but students were allowed to use mobile phones. The objective of the	I observed the lesson for 50 minutes. It started at 8.00 a.m. and finished at 8.50 a.m. The lesson started at 8am with setting the class, checking the absentees. Introduction: 8.05: She orally explained the topic of the lesson and its objectives. 8.07: She used the whiteboard and wrote the sentence with a proverb and asked the students to give their own examples of their own. (Warming up moment to revise the previous material). At the beginning of the lesson, students were looked sleepy, not active. Then she started to give her own examples to lead the discussion with the students. 8.15 She tried to involve all the students; as it was the new class that she was teaching, she wanted to know the level of their vocabulary, and how broadly students could use them in conversation. She let all students take turns in speaking every time.	The teacher did not use any technology in her classroom. However, she allowed students to use mobile phones during the lesson which enabled them to search for word translations. Also, the Internet was accessible in the classroom. At the end of the lesson, the teacher recommended students to visit the Intranet and asked them to prepare a presentation on the given topic from her syllabus.	Students were not active at the beginning of the lesson but they respectively listening each other and the teacher. The teacher encouraged them to always express their thoughts. Mode of interaction: verbal feedback and making clarifications on whether students understood the meaning of each word or not.	The teacher did much speaking and tried to ask general questions to raise students' interest. She focused her teaching only with the text-book, her level of Kazakh and Russian is fluent. She was positive and often praised the students with words like 'good', 'well done' ...

Sampling of observation

In regard to access, I first sought permission from the dean of the faculty as well as the heads of each department to approach teachers. I explained the restricted timescale I was working to and by looking at the teaching timetables, they were able to suggest the names of teachers to observe. As regards to the teachers themselves, I believed they were broadly representative in that there was a mix of gender, age, specialism and interest in ICT based on their self-reporting. I then spoke to the teachers, who could recall filling in the questionnaire and my project. I explained that they were under no obligation to take part, but all the teachers I spoke agreed to let me observe. The ethical considerations were explained, and I received permission to note-take and video record from each teacher.

Seven non-participant lesson observations were carried out in September 2019. Each lesson lasted approximately 50 minutes, and each was observed in-person once. The seven lesson observations (two English, two Russian, three Kazakh) were conducted. Three of the lessons (with participants KT2, KT1, RT2 see tables 40 - 41) were seminar lessons in which the aim was to discuss subject content in a target language. In contrast, four of the lessons (with participants ET5, ET2, KT3, RT3 see tables 39-41) were practice lessons in which the goal was to introduce vocabulary, grammar and pronunciation, and to integrate teaching points into developing language skills such as speaking, writing, reading and listening. It was not possible to carry out more observations as I was granted only two weeks for my field trip due to constraints in funding. Obviously, I would have liked to see more lessons, but time would not allow this. However, on the basis of what I did see, and on the interviews, I believe I would have seen similar patterns in any further observations.

A challenge in observation is whether what the observers is seeing is typical or not, in other words participant/social desirability bias. My view was that although some of the teachers may have put a

little more effort into these classes (and one teacher a lot more effort), the structure of the classes and the use of ICT was fairly typical. I believed this because of the reactions of the students – they did not seem surprised by the lesson – and in any case, teachers had little notice of my observation so they could not prepare anything more beyond what they typically did.

Observations can also be made untypical by the presence of an observer. Cohen et al. (2007) stated that unlike interviews, the observation can separate the researcher from involvement, but those being observed may act untypically because of that presence. In my observations, I took care to sit at the back and not interfere. In one case, the students asked me about my experiences in the UK, but this did not affect the structure of the lesson.

How the observations were carried out

Bernard (1994) identified three types of note-taking in Social Science including: field jottings (quick notes which are expanded later); a field log (somewhat detailed notes, but includes recordings that help 'log' the researcher's memory that are later expanded); and a field diary (researchers' written feelings and perceptions). In my observation study, I made notes on what I heard and saw in the setting (i.e., the university classroom), but I did not record what I thought or felt during the observation.

At the beginning of each observed lesson, I was introduced as a researcher who would not interfere in the lesson. All went smoothly, but I did find it difficult at times to keep up with taking notes while observing. However, I was able to go back to video recordings of the lessons to fill in the blanks if needed. I initially found observations stressful as I tried to focus on what was happening in the classroom as to not miss anything. Keeping in mind that feelings and thoughts of the researcher might be challenging and inseparable in recording observations, I followed the note-taking suggestions by Schensul and LeCompte (1999): the use of exact quotes, protection of participant

confidentiality using pseudonyms, describing events in order of occurrence and without the inferring of meaning, providing background information, as well as recording the time and date.

By observing, I was able to experience respondents' actions, collecting data about teachers' ICT use in the context itself that would not be possible with any other methodologies. Overall, I ended up enjoying the process and felt that it contributed to triangulation of data later in the project.

Analysis of observations

Notes were taken in the lesson and then compared to the video recordings. This enabled me to fill in gaps and to get a better idea of the lessons. I laid out the notes for each lesson and made comparisons across each of the themes I had identified as important. This enabled me to look for consistencies and contrasts in how lessons were introduced, how much technology was used, how it was used, the use of textbooks, teacher-student interactions and so on. My findings were then presented in the form of a narrative, which showed what had occurred within the 50-minute lesson observations. Finally, the structure of the narratives was checked and discussed with my supervisor to ensure trustworthiness.

Summary of observation data collection

This section has covered following:

1. The types of observation including participant and non- participant approaches and structured, semi structured and unstructured approaches.
2. The design of a semi structured observation schedule and an example of data collection.
3. Sampling so that a range of teachers as regards gender, age, specialism and interest in ICT were included.
4. Data analysis – from data collection, transcription and thematic reporting.

Interview

This section of the report gives an explanation of the purpose of the interview method before describing the interview sample. Next, I provide a reflection on the format of the interview describing my choice of questions when creating the interview schedule. I also, reflect on how I carried out my interviews with teachers as well as with HoDs and IT personnel. This is followed, finally, by data analysis and the summary.

Purpose of interview

The purpose of an interview is to have a conversation with participants in order to generate an in-depth understanding of a perspective on the world, or the interviewees' lived world, with respect to their own interpreted meaning of the described phenomenon (Kvale, 2007). In my study, interviewing gave an opportunity for teachers to talk about their beliefs, perceptions and concerns of teaching with ICT. In one of the interviews, a participant was quite passionate when sharing past experiences of Soviet times and this helped me to generate a deeper understanding of what they had lived through and how much had changed, not just in relation to ICT use, but in language teaching and learning in general. This type of dialogue would have not been possible with using a questionnaire.

Cohen et al. (2007) warns that interviewing can lead to subjectivity and bias of which has to be recognized and controlled. In my study, I did this by recognising my own biases. As a researcher, for instance, I tried to evaluate some interviewees' experiences they have had in reference to ICT use using prompt questions such as 'It is interesting, can you tell more about it?'. From the start of an interview, I sought to express a neutral response to what the interviewees told me and not to lead, hence minimizing bias. I sought to gain consistency in the interviews by working from a semi-

structured schedule, so that I asked everybody similar yet broad questions. I tried to access a representative sample of respondents and in data analysis.

The interview sample

My interview sample was self-selecting. Within the questionnaire, I asked participants to state whether they would like to pursue some of these themes with me by taking part in an interview. Around 45 participants stated their willingness to participate. I sent out emails to them sixteen volunteered. I was under time constraints and selected eight of these teachers (three Kazakh, two Russian, and three English language teachers) and sought a range of teaching experience, gender and subject teaching. One of the deputy deans were available during the first phase of interviewing. These interviews were carried out over Skype and other online video communication software. During my visit to the case study university for my main data collection, I selected from the questionnaire survey a further sixteen possible volunteer participants, of which eight were available. These were again chosen to access a broad range of teachers (three Kazakh, three Russian, and two English language teachers) in terms of age, language taught, gender, and level of ICT use, something I could do using the volunteers' questionnaire return. This inevitably had to be a convenience or access sample, however I believed the issues they raised were broadly representative of others in those positions.

The first round of interviews was conducted between 25th May and 10th June 2019 and involved. The second round continued in Kazakhstan between 8th – 22nd of September and involved. I also carried out interviews including: two deputy deans of faculty, one was the previous dean and the second, the present deputy dean; two of the three departmental managers (one did not wish to take part); and an IT specialist who supported the online portal for teaching and learning. These interviews were carried out in different ways. One of the deans was interviewed via Skype in March 2019, while the

other dean, heads of departments and the IT specialist were interviewed in-person during my visit to the case study university in September 2019. Overall, 21 interviews were carried out, with each interview taking approximately an hour.

The interviewing process was intensive as I was only in Kazakhstan for two weeks. Suitable dates and time were arranged in advance and during working days. The interviews with teachers took place in available university classrooms.

Format of interviews

Punch (2014) categorized interviews into structured, which is much like a questionnaire, only face-to-face; semi-structured which has an order of open-ended questions and possible prompts; and unstructured, for which there may a minimum number of open-ended questions but each interview may cover different themes depending on how the conversation develops. A semi-structured interview was used in this study and used prompts to follow up issues that might arise from the participants` responses (see Appendix C). Interview questions included questions about the language teachers` background, obstacles they have faced in their teaching practice and their job satisfaction. Questions about their ICT use and ICT skills were also included, as were questions about their current experiences with ICT. Further questions concerned encouraging and discouraging factors for ICT use, support they received, and training provided to use ICT. More general questions which were beyond the institution were raised later in the interview. I used my semi-structured interview flexibly. For example, I would rephrase questions in order to clarify questions and introduce different prompts depending on the participant.

Table 12: Interview questions mapped to research questions

Research questions	
Warm up questions are aimed to gain	Could you please, tell me a little more about your professional experiences, particularly about your

<p>general information about language teacher's education background, experience, job satisfaction and difficulties, workload, strength and weakness of current curriculum.</p>	<p>working experience in your current department? (qualification, background); How do you find your work? Is it demanding? Do you get time to do things outside work? Are you satisfied with your work-life balance?;How long have you been a language teacher? What led you to take this career path? What have been the satisfactions /difficulties?; Which courses do you teach? How do you think students get on in your courses? Do they find the courses interesting and relevant? How do you feel about the syllabus you work to? Do you think that the existing curriculum meets the needs of students - to what degree? /What are the strengths and areas to develop?</p>
<p>RQ1. To what extent do LT use ICT in teaching at the target university in Kazakhstan? Questions are aimed to understand LT behavior of ICT use.</p>	<p>Can you tell me about ways in which you use ICT for preparing teaching? (Prompts: do you use the Internet in preparing lessons, tell me about the PPTs you produce, book CDs, search authentic material)</p>
<p>RQ2. What do language teachers see as the benefit of using ICT and what helps them to use it? Questions are aimed to see how the use of technology may help or benefit teachers' classroom practices and what influences to use them?</p>	<p>Why do / would you use ICT in your teaching?; How does / would it help you?; Tell me about ICT in your teaching. (how did you use it, where did you use it, did it help/did it not help, why and why not) Blogs; Social Networks (Facebook); Google groups; Email; Presentations text media links; IWB – at what level; SMS; Electronic dictionaries; Audio tapes;Internet access to authentic material; Internet access to native speakers?; Have you had any training in the use of ICT? When? Where? For how long?</p>
<p>RQ4. What constraints do language teachers face in using ICT? (Questions are aimed to distil factors that discourage ICT take-up.)</p>	<p>What do you believe is preventing you from ICT use? (Prompts: do not see the point, lack of support, training, nature of the curriculum.); Do you think that it is easy to use ICT in the schemes of work you follow?; Do you think that there is enough time in the lesson to use ICT? Do you believe that the university encourages/ discourages you to use ICT?</p>
<p>RQ5. What are the consequences of using ICT?</p>	<p>Are staff general able to integrate ICT?; What are the institutional needs regarding ICT?; Has the promotion of ICT been a good thing?; Would you like to comment further?</p>

How the interviews went

Wellington (2015) had reported that interviewing is an enjoyable and integrating activity in research, and I agree. I found conducting interviews enjoyable and I established friendly and productive relationships with my interviewees. However, I found it challenging at times when it came to interviewing managers of the departments as well as experienced senior members of the teaching staff. One or two interviewees misunderstood my role and assumed I was there to report back to the institution on their problems of access; here, I had to explain in a polite manner that my data was for research purposes only.

The aim of the case study was explained on the questionnaire and the purpose of the interview was explained to the teachers who had volunteered for interviews prior, and permission was sought by filling the consent form to participate further. Nearly all of the interviews lasted for approximately one hour. All of the interviews were audio recorded with the teachers' permission and a voice recorder was used to record the interviews.

Both the Skype and face-to-face interviews went very well, but I preferred interviewing over Skype. I found that participants that were interviewed over Skype were less distracted compared to those interviewed face-to-face, though perhaps this was due to the fact that the Skype interviews were often conducted after office hours. It felt comfortable talking over Skype and the participants were used to such online tools in their daily life.

Participant teachers were interviewed in their preferred languages. Kazakh teachers chose to be interviewed in Kazakh and the Russian language teachers were interviewed in Russian. Teachers of English were interviewed according to their language preferences in Kazakh and in Russian. This gave them the opportunity to express themselves much more fluently; for this reason, none of the interviewees chose to be interviewed in English.

The interviews were conducted in a friendly manner which enabled trust and a rapport to be built up during the interview. As a researcher, the context was familiar for me, given that my Master's degree was obtained at the case study university. This had advantages in that I could easily understand the context and teachers' background as well as their concerns. Despite this, I did not know the teachers that I interviewed, but I felt they gave sincere responses to the questions asked.

Analysing the interviews

The coding process followed a conventional process of open coding, thematic coding, categorising of themes and later fine tuning in reporting.

Open coding involves making associations between the interview data and the topics that the researcher is interested in. It is generally a more bottom-up process because the researcher is looking for any kind of association that comes to mind. For example, this teacher that was talking about ICT stated:

“It is impossible to teach without technology while experiencing lack of books in Kazakh, and all the teachers prepare their teaching materials mostly relying on Internet resources”. (KZ3)

Here, the open codes I made with this part of the interview were: technology as essential; lack of resources; ICT as preparation.

The open coding process was very useful for helping me explore the interviews and capture what was being said. At the early stage of the coding process, one of the transcribed and coded interviews was discussed with my supervisor and later with a peer. There is no single expected approach to translation of interview data, whether before or after analysis. In my case I transcribed the data into their original language but then translated into English before the analysis. This enabled me to discuss coding with my supervisor. However, it also meant that I could return to the original

transcript if the translation was unclear and constantly compare my translation with the transcript in the original language.

These open themes were moderated and showed a relatively high level of agreement; in cases in which we did not agree, I was able to explain why I made the code, and this explanation was found to be satisfactory.

The data from a limited number of interviews were entered into NVivo and each unit of meaning was tagged with one or more nodes (codes are named as nodes in NVivo). As a result, 143 codes (Appendix H) were developed. However, such a large number was unmanageable and so open codes were merged into a smaller number of large themes. For example, there were 15 codes associated with “Motivation to teach”, but these were aggregated as one theme with three or four subthemes. Similarly, ten of the open codes were associated with the use of ICT and could be aggregated. In this way, I was able to identify nine large themes. However, these nine were still too large and needed fine tuning, and I needed to develop more abstract sub themes within each. For example, the 15 open codes associated with “motivation to teach” could be regrouped into three subthemes: (1) attractive job conditions; (2) relationship with young people; and (3) identification with the role. This process can be illustrated visually in Table 13; Table 14; Table 15. To elaborate, the Table 13 shows an example of the open codes I originally made while Table 14 shows how I regrouped those same codes into sub-themes. At this point, I was able to construct a coding framework consisting of themes and sub- themes and could relate these to my research questions as shown in Table 15.

Table 13: Open coding example

Motivation to teach
<ol style="list-style-type: none"> 1. better balance 2. continuous self-development 3. happy life 4. likes 5. seeing impact of teaching 6. valuable job 7. students' interest to study 8. working with young people 9. career goal 10. competent teacher of KZ 11. devoted profession 12. dream job 13. other ambitions 14. persuaded to teach 15. self-image

Table 14: An open coding example associated with the theme

Motivation to teach		
attractive job conditions	relationship with young people	identification with the role
<ol style="list-style-type: none"> 1. better balance 2. continuous self-development 3. happy life 4. likes 5. seeing impact of teaching 6. valuable job 	<ol style="list-style-type: none"> 1. students' interest to study 2. working with young people 	<ol style="list-style-type: none"> 1. career goal 2. competent teacher of KZ 3. devoted professional 4. dream job 5. other ambitions 6. persuaded to teach 7. self-image

Table15: Coding frame

RQ?	Themes	Sub themes	Scope
RQ1. To what extent do language teachers (and groups of language teachers) use ICT in teaching at the target university in Kazakhstan?	1. ICT use	<ol style="list-style-type: none"> 1. Use after lesson 2. During the lesson 3. Lesson preparation 4. Personal use 5. Multimedia 6. Attitudes 	This looks at language teachers` general attitudes and behavior of ICT use
	2. Value of ICT	<ol style="list-style-type: none"> 1. Impact of ICT 2. ICT motivates 3. Communication 4. Attitudes 5. Multimedia 	
RQ2. What do language teachers see as the benefit of using ICT and what helps them to use it?	1. Encouraging factors of ICT use	<ol style="list-style-type: none"> 1. Impact on learning 2. Routines 3. Time 4. Access 5. Assessment 6. Training 7. Wider environment 8. Age 9. IT support 	This looks at how the use of technology may help or benefit teachers` classroom practices and what influences to use them?
	2. Curriculum	<ol style="list-style-type: none"> 1. Changes 2. Top-down design 3. Relevance 4. Role of technology 6. Limited Library resources 	
	3. Government backing	<ol style="list-style-type: none"> 1. Government promoted KZ 2. Government backing to ICT 3. Unaware of government backing 	
	4. Teachers` satisfaction	<ol style="list-style-type: none"> 1. Rewards 2. Development 3. Positive conditions 4. Resources 	
RQ3. What constraints do language teachers face in	1. Discouraging factors of ICT use	<ol style="list-style-type: none"> 1. Drawbacks on learning 2. Lack of access 3. Lack of training 4. Assessed 	This looks at the factors of ICT use.

using ICT?		<ul style="list-style-type: none"> 5. Wider environment 6. Time 7. Routines 	
	2. Curriculum	<ul style="list-style-type: none"> 1. Changes 2. Top-down design 3. Relevance 4. Role of technology 5. Limited Library resources 	
	3. Teaching dissatisfaction	<ul style="list-style-type: none"> 1. Assessment 2. Rewards 3. Job conditions 4. Resources 5. Lack of development 6. Adverse conditions 	
RQ4. What are the consequences of using ICT?	1. Culture of University	<ul style="list-style-type: none"> 1. Controlled environment 2. Student background 3. Commercially driven 4. All teachers competent 5. Parent involvement 6. Growing 7. Closed recruitment 	
	2. Status of Language	<ul style="list-style-type: none"> 1. Student interest 2. Support 3. Status 4. English is a barrier 5. KZL teaching is improving 6. Status of KZ during Soviet times 	

The approach was in part top-down, given that I had read literature around teacher take-up of ICT prior to the interviews, and the interviews were already organised around the themes I had wanted to explore. However, the initial open coding process pushed me to look at the data in new ways. For example, KT2 stated.

“When I started teaching Kazakh language it was not valued at all, it has not got any status at a national language. This is the time when Russian language was highly promoted, and Kazakh was neglected desperately. There was a psychological discrimination for Kazakh language speakers.”

As seen in the example, through the interview, I was able to capture a better idea of addressing the issues of the “status of Kazakh language” and elements of teaching the Kazakh language in ways that was not predictable.

In another example, by open coding, I became aware of the teachers’ dissatisfaction with teaching resources and when I went into this in more detail, it was clear that Kazakh language teachers’ particularly felt this. I had not predicted that ICT could be seen as a compensatory mechanism addressing the lack of resources, as one of the KT3 said:

“As I mentioned, the difficulties with teaching resources led us to learn to use technologies and I am proud to be advanced in the use of ICT among colleagues at the university.”

Once I had applied the new coding framework in NVivo, I could aggregate who said what in relation to which theme. I was able to produce tables and develop a narrative account around each theme (see Chapter four). During this process, some codes were amended to better express a point, and some were merged to provide a more integrated account. The process of coding was very time consuming, but in the end, it resulted in a rigorous analysis.

Interviews with course leaders, HoD and ICT support

People with different roles in an organisation can offer different views of processes and events. This is especially important in researching the use of ICT because the decision to use technology cannot be made by teachers themselves. By interviewing head of departments, deans and an IT specialist, I could gain a wider understanding of the context in which teachers work.

Deputy deans and HoDs in this context have a demanding role as they deal with the monitoring of teachers' work which includes schemes of work, curriculum design, teacher evaluations, teachers' teaching practices, teacher training, all while undergoing research publications. They are directly involved in curriculum planning and supervise the process of annual reviews. As seen later, they have a wider responsibility for the external reputation of the university and responsibilities for resources and budgets. They were also a point of contact with the Ministry of Education. However, they were not directly involved in teacher training arrangements.

IT services provide technical support across departments, working with both teaching staff and students. Their focus is largely on supporting the education platform 'Univer' that is used at the university, trouble shooting, providing training and manuals, as well as providing relevant information on its use. I interviewed an IT support worker who had been working in the university for over twenty years.

As for the analysis, I carried out thematic coding around the themes of their current role, challenges, curriculum organization, policy, government backing and technology support. This was because, by this point, the scope of the study had been well established, so I was able to conduct shorter interviews with a more specific focus than I had carried out with teachers.

Summary of interview data collection

This section has covered following:

1. The purpose of the interview including weaknesses and strengths of semi-structured interviews.
2. The self-selecting sampling, covering the range of teachers in regard to gender, age, specialism and interest in ICT.

3. The format of interviews and an example of interview questions, mapped to the research questions.
4. The process of the interview procedure including the challenges, of interview data collection.
5. Data analysis – from coding, thematic reporting, and an example of framework in relation to RQ.
6. Course leader interviews and data analysis around broad thematic coding.

This chapter has described the three different methods used in the study covering collection, analysis and writing up of data. Summaries of each method appear after each section.

Chapter 4: Findings

In this chapter, I will describe the findings to the main study. It will be split into further sections for each type of data that was collected which includes: survey, observation and interview.

Survey

This section describes the quantitative analysis of the survey data. It is further divided into eight parts:

1. Demographic and personal characteristics breakdown.
2. Ownership of a computer and experiences of training courses.
3. ICT skills /confidence.
4. Attitudes towards ICT use.
5. Access to ICT.
6. Cross-tabulations of ICT use against respondents: ICT skills, training, attitudes, access to ICT.
7. Awareness of government backing.
8. Significance levels based on cross-tabulations against ICT use.

As explained in the methodology, a survey of language teachers was carried out and response rate was 37% (or n=111) of a total population of 298 language teachers.

Personal characteristics

Personal characteristics of the language respondents covered the participants` gender, age, teaching experience, and teaching specialism. The findings showed that the majority of the respondents were female (77%), which echoes the data on the dominance of females in the Kazakhstan tertiary education setting (Asian Development Bank, 2018) (Table 16).

The age distribution of the participants was quite diverse; approximately half of the participants were aged under 35, approximately a third were aged between 36-49 years old and a smaller percentage of respondents were aged 50 or above years old Table 17.

Just under half of the respondents had less than ten years of teaching experience, showing that teaching staff was generally new to teaching. Almost half of the respondents were English language teachers (43.5%), just over a third specialised in Russian language and around a quarter specialised in Kazakh language.

Table 16: Breakdown of the respondents according to gender

Gender	N=	%
Male	31	28
Female	80	72
Total	111	100

Throughout this chapter data are presented as percentages of valid responses rounded up to the nearest whole number and in some cases the total number of responses does not add up to 100 precisely.

Table 17: Breakdown of the respondents according to age group

Age	N=	%
Under35	51	46
36-49	36	32
50 or above	23	21
Total	110	100

Table 18: Breakdown of the respondents according to teaching experience

Experience	N=	%
Less than 10	49	44
11-20	31	28
21 or more	31	28
Total	111	100

Table 19: Breakdown of the respondents according to teaching specialism

Specialism	N=	%
Kazakh	25	23
Russian	36	33
English	47	44
Total	108	100

Various cross-tabulation tables were produced and are viewable on demand. Some interesting findings were that male and female age profiles were different across specialisms; the Russian teachers were overwhelmingly female, while the majority of Kazakh specialist teachers were male.

ICT training experiences

Responses to Q-B1 showed that nearly all teachers (97%) had personal computers. This can be explained by the widespread computer ownership in Kazakhstan and the fact that as there were no computers in university classrooms or in offices, teachers` had to use their own computers in and out of lessons.

Table 20 and Table 21 show that most teachers had not attended long or short CPD training courses or workshops for improving ICT skills. I was quite surprised at this finding as it is a requirement for teachers to attend at least 70 hours of CPD training per year. To elaborate, CPD, or (state proper name here), are training programmes that the university offers for staff; these programmes cover a wide range of topics and skills that staff can develop, including (give one example here) and of course, ICT use. The fact that the majority of participants had not attended CPD training for ICT reflects their preferences for other courses over ICT. This could either be a result of teachers not seeing ICT courses as a necessity, or that teachers had already taken those courses in previous years or had acquired ICT skills in other ways. On the other hand, it might indicate reluctance by some people to develop their skills.

Table 20: Breakdown of the respondents according to long term CPD training experiences

Statement			Total
Have you ever attended any long CPD (Continuing Professional Development) courses on using ICT for teaching and learning?	No	N=	73
		%	66
	Yes	N=	37
		%	34
Total			N= 110
			% 100

Table 21: Breakdown of the respondents according to short term CPD training experiences

Statement			Total
Have you ever attended any short CPD courses on using ICT for teaching and learning?	No	N=	60
		%	55
	Yes	N=	49
		%	45
Total			N= 109
			% 100

Staff members` ICT skills/confidence

In regard to confidence and ICT skills, the majority saw themselves as reasonable in their level of skills and confidence. However, a small minority described themselves as reluctant. The overall picture is that a lack of skills was unlikely to be the key factor in low use of ICT, except in a few cases.

Table 22: Breakdown of the respondents according to ICT skills/confidence (100 valid responses)

ICT skills/confidence	N=	%
Reluctant	16	16
Reasonable	53	53
Confident	31	31
Total	100	100

Frequency of ICT use in teaching and learning

Table 23 reports on ten statements about the use of ICT which also includes weighted means and modal responses. The overall picture is quite interesting, because all modal responses for the use of ICT were *always*, *often* and *sometimes*. This suggests a higher use of ICT than I had anticipated. The most frequent use of ICT was the use of the Internet and the use of PowerPoint presentations for preparing resources. This suggests ICT was being used to access or to present information. In addition, a surprisingly large number of respondents used phone and e-mail to interact with their students. This suggests that the staff were comfortable in using emails or messaging using a smartphone. Hardware that was used the least was the IWB, presumably because these were not often accessible in the classroom. It is noticeable that teachers were willing to recommend their students to use online resources.

Table 23: Breakdown of the respondents according to ICT use

Statements	Never 0		Rarely 1		Sometimes 2		Often 3		Always 4		Valid response	Weighted mean	Modal response
	N=	%	N=	%	N=	%	N=	%	N=	%			
1. I use the Intranet (in some universities there is also a portal “Intranet”) to send course information to students.	5	5	13	12	13	12	31	28	49	44	111	2.95	Always
2. I use Internet to prepare my resources	2	2	11	10	25	23	48	44	23	21	109	2.72	Often
3. I use Power Point or other presentation software in my lessons.	1	1	14	13	33	30	40	37	21	19	109	2.60	Often
4. I use a mobile phone to contact students about lesson issues.	9	8	12	11	29	26	33	30	28	25	111	2.53	Often
5. I send and receive students` work by email.	4	4	16	15	31	28	37	34	21	19	109	2.50	Often
7. I encourage students` ICT use out of class (e.g., discussion forums, blogs, wikis)	4	4	16	16	36	33	27	25	27	25	110	2.51	Sometimes
6. I recommend students to use testing and revision online resources. (e.g., quizzes, presentations)	4	4	12	11	45	41	26	23	24	22	111	2.48	Sometimes
8. I prepare lessons with the help of ICT	4	4	14	13	40	36	33	30	19	17	110	2.44	Sometimes
9. I use the CD-ROM that comes with the textbook in class.	19	17	18	17	31	28	21	19	20	18	109	2.04	Sometimes
10. I use IWB (Interactive White Board) in lessons.	28	26	25	23	29	27	16	15	10	9	108	1.58	Sometimes

Attitudes towards ICT use

Attitudinal responses to ICT use are presented in the Table 24. Those who were very positive about ICT should have agreed to statements E1, E2, E3, E4, E5, and E8 but disagreed with the statements E8 and E7 – these statements can be seen as in Table 24. Many of the responses were positive. In particular, respondents wanted to use ICT more in their teaching. Nearly three quarters of the respondents and two-thirds thought ICT enabled students to be more engaged. Very few people thought ICT distracted students. There were also doubts as to whether they were expected to use ICT with over 40% feeling they were not expected to use ICT.

Table 24: Breakdown of the responses in regard to attitudes to ICT use.

Statements	N	Strongly disagree. 0	Disagree 1	Neither agree nor disagree 2	Agree 3	Strongly agree. 4	Weighted mean	Modal response
E1. I would like to use ICT more in my teaching	111	1	11	16	60	12	2.44	Agree
E2. ICT enables my students to be more engaged	109	4	7	19	54	15	2	Agree
E3. my teaching is more interactive using ICT	110	5	4	27	52	13	2	Agree
E4. ICT helps my lessons to be more student centered	106	3	8	39	36	14	2	Neither agree nor disagree
E5. I do have enough time to learn to use ICT	110	5	3	37	30	6	2	Neither agree nor disagree
E6. I am expected to use ICT in teaching	107	4	37	35	23	1	2	Disagree
E7. To use ICT in class takes a lot of time*	106	14	38	34	13	1	1	Disagree
E8. ICT distracts students*	106	12	53	25	10		1	Disagree

Access to ICT

This section presents responses in regard to access to ICT (Table 25). These came in the form of Yes/No binary responses. The majority of teachers had computer access in the office. However, accessibility of computers in teaching rooms was not high, reflecting a poor ICT infrastructure for teaching purposes. There is a possible contradiction between F2 and F3 which can be explained by the fact that the majority of teachers brought their computers to the classrooms.

Table 25: Breakdown of the respondents according to ICT access

Statements	Valid Response	Responses	N=	%
F1. I have a computer in my office.	111	Yes	89	80
		No	22	20
F2. There are no computers in my teaching room	103	Yes	14	14
		No	89	86
F3. In my teaching room, I usually have a single computer.	108	Yes	52	48
		No	56	52
F4. Teaching rooms usually have a set of computers.	109	Yes	49	45
		No	60	55
F5. All the teaching rooms have access to the Internet.	109	Yes	55	51
		No	54	50
F6. I have access to computer support when I need it.	107	Yes	70	35
		No	37	65
F7. It is difficult to book ICT equipment for language learning and teaching.	110	Yes	53	48
		No	57	52

Table 23 demonstrates results for ICT access for the different teaching specialisms. From this, it was found that Russian language teachers had less access to computers in classrooms compared to the other language teachers.

Table 26: Breakdown of ICT access according to teaching specialism

Access to ICT			Kazakh		Russian		English	
	Valid Response	Responses	N=	%	N=	%	N=	%
F1. I have a computer in my office.	108	Yes	22	88	23	63	41	87
		No	3	12	13	36	6	13
F2. There are no computers in my teaching room	101	Yes	1	5	8	22	5	12
		No	21	96	28	78	38	88
F3. In my teaching room I usually have a single computer.	106	Yes	13	54	17	74	21	46
		No	11	46	19	53	25	54
F4. Teaching rooms usually have set of computers.	106	Yes	6	25	9	25	32	70
		No	18	75	27	75	14	30
F5. All the teaching rooms have access to the Internet.	107	Yes	13	52	20	57	22	47
		No	12	48	15	43	25	53
F6. I have access to computer support when I need it?	105	Yes	14	58	22	63	32	70
		No	10	42	13	37	14	30
F7. It is difficult to book ICT equipment for language learning and teaching.	107	Yes	9	36	13	37	28	60
		No	16	64	22	63	19	40

Questions beyond the institution

This section describes teachers' perceptions of government backing for ICT use and on curriculum change. Table 27 shows that nearly half of the respondents were not sure about the government backing, but many teachers thought that they could use ICT with the present curriculum. The majority of teachers agreed that ICT had led to big changes in the way that language teaching and learning is carried out.

Table 27: Breakdown of ICT access according to government backing

	Valid response		Strongly disagree 0	Disagree 1	Neither agree nor disagree 2	Agree 3	Strongly agree 4	Weighted mean	Modal response
G1 ICT has led to big changes in the way language teachers teach languages.	105	N=	2	9	25	50	19	2.71	Agree
		%	1	9	24	48	18		
G2. Beyond my institution there is little government backing for use of ICT in language teaching and learning.	109	N=	9	26	43	24	6	1.90	Neither agree nor disagree
		%	8	24	39	22.	6		
G3. I cannot use ICT following the present curriculum.	109	N=	3	46	40	13	6	1.73	Disagree
		%	3	42	37	12	6		

Breaking down of high, medium, low users.

In the table 28 below, some cross-tabulations are provided, showing ICT use against other characteristics: gender; age; teaching specialism; years of teaching experience; CPD training; ICT skills; access; and government backing. As seen in the methodology, I created groups of higher, medium and lower frequency users (of ICT) and these tables show the breakdown of teacher characteristics against high, medium or low use of ICT. For example, table 28 shows how many male and female teachers fall into which category of ICT use, and that there were 6 male teachers in the highest category, 10 in the middle and 14 in the lowest. Intuitively this shows that males were more likely to be in the lowest category. To show this distribution further each table provide an expected N generated within SPSS, i.e. what the breakdown would look like if the distribution was proportional. In table 28 the expected N for males, across the three categories

of ICT use is 9, 10, 10. Note that the expected N differs slightly across some categories due to rounding data to the nearest whole number and because the numbers of teachers in the high, medium and low users is not exactly equal.

Cross-tabulation ICT use against respondents` personal characteristics

Proportionally, females were more likely to be higher users of ICT than males. This is surprising as it is often seen that females are seen as more resistant to use technology in comparison to males. However, this is not the case here.

Table 28: Cross-tabulation of ICT use against gender

Gender		ICT users		
		highest	medium	lowest
Male	N	6	10	14
	Expected N	9	10	10
Female	N	27	26	21
	Expected N	24	26	25
Total	N=111	33	36	35

Proportionally, younger members of staff under 35 years old were more likely to use ICT; this is not surprising giving the understanding that younger people have grown up with ICT. However, this does not mean teachers over the age of 50 cannot be high-ICT users, or that all young people are going to be high-ICT users.

Table 29: Cross-tabulation of ICT use against age

Age		ICT users		
		highest	medium	lowest
Under35	N	22	14	12
	Expected N	15	16	16
36-49	N	6	17	10
	Expected N	11	12	12
50 or above	N	5	4	13
	Expected N	3	7	7
Total	N=110	33	35	35

English teachers were most likely to be high users of ICT (Table 30). This might be because English language teachers use ICT to access authentic language resources; however, Kazakh and Russian languages are widely spoken in everyday life in Kazakhstan.

Table 30: Cross-tabulation of ICT use against teaching specialism

Teaching specialism		ICT users		
		highest	medium	lowest
Kazakh	N	4	5	12
	Expected N	7	8	8
Russian	N	7	15	12
	Expected N	11	11	12
English	N	21	15	10
	Expected N	14	15	14
Total	N=108	32	35	34

Teachers with less experience were more likely to be highest users of ICT. This is not surprising if as teachers with less experience were mostly younger, and younger teachers were found to use ICT more.

Table 31: Teaching experience against ICT use

Teaching experience		ICT use		
		highest	medium	lowest
Less than 10	N	20	16	11
	Expected N	15	16	16
11-20	N	6	12	10
	Expected N	9	10	10
21 or more	N	7	8	14
	Expected N	9	10	10
Total	N=111	33	36	35

ICT skills cross-tabulation against ICT skills

Table 32 shows a relationship between ICT skills and ICT use, such that teachers with confident ICT skills were more likely to be high users of ICT than other teachers. This was statistically significant (Table 38). This is not surprising because a level of ICT skill is needed in order to use

ICT for teaching. Another way of looking at the same finding is that those teachers who use technology more develop their ICT skills and therefore become more confident in ICT. So, there is possibly a two way of relationship between ICT skills and ICT use.

Table 32: Cross-tabulation of ICT use against ICT skills

ICT use		ICT users		
		highest	medium	lowest
Reluctant	N	2	5	10
	Expected N	6	6	6
Reasonable	N	13	19	21
	Expected N	18	17	18
Confident	N	19	10	2
	Expected N	10	10	11
Total	N=105	34	34	33

ICT training cross-tabulation

Table 33 and Table 34 show a relationship between long and short term CPD training and ICT use. Teachers who had attended short or long term CPD training courses were more likely to be high users of ICT.

Table 33: Cross-tabulation of ICT short term CPD training against ICT use

Have you ever attended any short CPD courses on using ICT for teaching and learning?		ICT users		
		highest	medium	lowest
No	N	17	14	29
	Expected N	20	20	21
Yes	N	20	20	9
	Expected N	16	16	17
Total	N=107	37	34	36

Table 34: Cross-tabulation of long term CPD training against ICT use

Have you ever attended any long CPD (Continuing Professional Development) courses on using ICT for teaching and learning?		ICT users		
		highest	medium	lowest
No	N	20	23	30
	Expected N	24	24	25
Yes	N	16	13	8
	Expected N	12	12	13
Total	N=110	36	36	38

ICT attitudes cross-tabulation

Table 35 demonstrates the statistically significant relationship between positive attitudes of ICT and ICT use. However, the data does not explain in which direction this relationship goes; namely, we cannot tell from the table whether teachers who had higher levels of positive attitudes of ICT tended to use ICT more, or whether the higher use of ICT led to higher levels of positive attitudes of ICT.

Table 35: Cross-tabulation of ICT attitudes against ICT use

ICT attitudes		ICT users		
		highest	medium	lowest
High positive	N	27	28	9
	Expected N	21	21	22
Less positive	N	10	7	28
	Expected N	15	15	15
Total	N=109	37	35	37

ICT access cross-tabulation

Those teachers with better access to ICT were more likely to be high ICT users, but the results were not statistically significant (Table 36). It might be expected that all teachers had similar access to ICT, but there were differences depending in particular on subject taught.

Table 36: Cross-tabulation of ICT access against ICT use

ICT access		ICT users		
		highest	medium	lowest
High access	N	20	13	22
	Expected N	18	18	19
Low access	N	17	23	16
	Expected N	19	18	19
Total	N=111	37	36	38

Government backing cross-tabulation

Table 37 showed that there did not seem to be any relationship between ICT use and the wider awareness of government backing issues.

Table 37: Cross-tabulation of ICT use against government backing

Government backing		ICT users		
		highest	medium	lowest
Less aware	N	21	20	24
	Expected N	22	21	22
More aware	N	16	16	14
	Expected N	15	15	16
Total	N=111	37	36	38

Significance table between ICT use and other variables

Table 38 shows a statistically significant effect between ICT use and other variables.

Table 38: Significance table

Variables	p-value
ICT skills	<.05
ICT attitudes	<.05
Teaching specialism	<.05
Age	<.05
Short term CPD training	<.05
Long term CPD training	<.05
Gender	<.05
Teaching experience	<.052
ICT access	.738
Government backing	.571

Summary of survey results

This chapter has presented the key findings from the survey. The key findings are: 571

- Survey findings demonstrate that those who were more likely to be high ICT users among this sample were: those who were female; those under 35 years old; and those with less than ten years of teaching experience. This is likely to reflect the wider population of teachers. There was a spread of teachers from the different specialisms.
- Almost all teachers had personal computers and most of the teachers had not attended long or short-term ICT training courses. As regards to access, the majority had access to computers in the office but not in the teaching classrooms. However, Russian language teachers seemed to have less access to ICT.
- In regard to using ICT, the majority saw themselves as having reasonable skills and confidence in their ICT skills.

- How ICT was used was different across participants, but most teachers used the Internet to prepare resources and to access online resources. ICT was also widely used for communicating with students and for presenting work using PowerPoint.
- The majority of the respondents were positive towards the use of ICT.
- Higher use of ICT seemed to be associated with attending training; having positive attitudes; and having greater access to ICT. However, there did not seem to be a relationship between awareness of government backing and ICT use. Language specialism seemed to play a part as English teachers were more likely to be higher users of ICT.

Observation

Observations of seven classrooms were carried out using a semi-structured schedule. This section aims to report on observation findings in five parts:

1. Lay-out of the classroom.
2. Flow of the lessons.
3. Engagement.
4. ICT resources used.
5. Reflections.

Lay-out of the classroom

The layout of six of the classrooms was similar to each other and consisted of five rows of desks with separate chairs with a desk at the front for the teacher to use. There was a generous amount of space, about three or four feet between the desks of which accommodated two people each. There was only a modest distance between teachers and students. There was a marker board in all the rooms but there was no interactive whiteboard in any of the classrooms I observed in. In most of the classrooms, there were no projectors, however, teachers were able to bring along a

portable projector (there were two for each department), but I did not observe teachers use a portable projector. There was a pull-down projector screen in two of the classrooms, but this was not used. The number of the students in each lesson ranged from 8-30.

In one of the lessons, the lay-out of the classroom was different with a big round table in the middle of the class around which students were seated. In this room, there was a computer, two big marker boards, a separate desk for the teacher at the side and another portable magnetic board. In three of the classrooms, there were two desktop computers at the front of the class for teachers to use, but they were not used. Teachers preferred to use their own laptops during the lessons. All classrooms had limited access to ICT resources. In each department, there were other classrooms with better ICT conditions, but I did not observe these.

Flow of the lessons

Almost all seven teachers started the lesson by greeting the students, settling the class, conducting registrations and presenting the lesson objectives orally. One of the teachers, R2, started the lesson later compared to the time that was shown on the timetable, explaining that it was because of the start of the new academic year and she was not aware of changes to rooms; other than that, the beginning of the lesson was very similar to the others. All seven observed lessons lasted for 50 minutes.

The flow of the lessons was similar with stages of settling; introducing learning objectives; practice; and discussion. To elaborate, all the lessons started with settling the class (ensuring that everyone was seated, announcing the start of the lesson, as well as introducing me to the students); registration (quickly monitoring students' attendance); and introducing or sharing the lesson objectives (5-10 minutes). In practice lessons, students were introduced to vocabulary, grammar structures, language functions (10 minutes). After introducing some language points in Kazakh and Russian, a discussion followed (15-20 minutes). In the English practice lessons, students practised new points (10-15 minutes). In these lessons, objectives covered particular

language structures or the introduction of new vocabulary or expressions. In the practice part of the lessons, they were asked to use these new structures or vocabulary in controlled situations, for instance, making examples with the new vocabulary and practising these with their partners.

In seminar lessons, the main part of the lesson was a classroom discussion. For example, in a seminar about smart technology, students were asked to discuss newly created platforms for teaching languages by comparing and contrasting advantages and disadvantages. One of the students, by searching the Internet, found websites for Kazakh language learning and shared these with other students. The rest of students looked at the website and analysed it. When they had finished, they started putting forward their ideas on how these websites might be improved. The focus was primarily on speaking as students were discussing policies for websites and debating the content of the material. In order to give counter arguments, students had to listen carefully to each other. However, reading skills were included as students were often asked to read in preparation for seminars and students came with printed resources.

There was a difference of integration of language skills between the seminar lessons and practice lessons. For example, there was no integration of all four language learning skills in seminar lessons, as Kazakh and Russian lessons covered speaking, listening as well as reading, but not writing. However, Kazakh, Russian and English practice lessons included listening, speaking, reading and at times a little writing. In practice lessons, teachers tried to integrate skills, for example, practising new vocabulary by speaking and by writing model sentences. Writing provided a different pace of activity so that students could take time over the production of language and discuss with each other. As for listening and reading, students listened to audio-video dialogues between native language speakers, which they later read and talked about.

Engagement

Overall, I found that the students were largely engaged in their learning and were motivated. For example, students during the seminars, as well as practice lessons, were ready to answer

questions, take the next step without being told or present points during discussions. In practice lessons, pair work worked well when students worked on using new grammatical structures.

However, in one of the Russian language practice lesson with RT2, I noticed less involvement of students, as only six out of 30 volunteered to read from the textbook, and only a few answered the teachers' questions, and some did not seem to listen to each other answers or respond to each other.

The seminar lessons were more concerned with subject content, nonetheless the activities seemed to be influenced by a communicative approach to teaching and learning. Seminar lessons involved a range of techniques to help engage the students with the content which included: using prompt questions to involve students in discussions and debates; teachers asking questions to individual students as well as the whole class; and teachers encouraging students to respond to other students. For example, teachers KT2, KT1 and RT2 encouraged students to get involved in discussions with each other and used paper-based resources. Teacher KT2 brought along the curriculum document for students to discuss. Teachers would ask one student to answer a question then other students would ask their questions, then the teacher asked another student the question and the same process continued until everybody had had a go. During the discussions, the teacher stopped to ask students to link discussions with real life issues, for example asking the students how the curriculum would look from the point of view of a teacher, a parent or a child.

In all four practice lessons, there were several examples of group work and pair work. For example, teachers ET5, ET2, RT2 and KT3 encouraged students to practise speaking with each other, using the grammatical structure taught, for example, 'what is this? or what is that', showing the objects in the class. Students in pairs took turns taking the role of asking and answering questions and changed partners with different students in the class to repeat the activity. Students then took turns to present their use of grammatical structure in front of the

class. In another example, teacher ET2 and RT2 started the lesson with a warm-up activity, revising the new vocabulary which lasted 7-10 minutes, then the teacher encouraged students to talk in pairs about their favourite TV, radio, and magazines. This was a free practice activity but with a focus on using lexical material correctly, taking into consideration grammatical points and the use of different tense forms. In a third example, teacher KT3 asked students to work together while doing the exercise from the textbook. She explained the use of proverbs in language and the historical events that led to the origin of the proverbs used in the exercise.

ICT resources used

In regard to ICT resources used, all teachers tried to get round the lack of resources but there were some differences. For example, teachers KT1 and teacher ET2 used iPads and laptops to play a video clip in front of the students as there was a small number of students so they could just about see the screen. Three teachers used printed resources instead. Students in all seven lessons were allowed to use their smart phones in order to look up words from the dictionary or for searching purposes. For example, teacher KT1 asked the students to find websites that were designed to help in learning Kazakh languages and explored their features by comparing them to one another. None of the lessons made use of PowerPoint, flashcards or pictures.

Some of the teachers, KT1, KT2, KT3, RT2 and ET5, encouraged students to visit the course website after the lesson to access the resources that they had uploaded; for example, teacher KT3 asked students to prepare a presentation using PowerPoint. Teacher KT1 recommended to use a chat group to share links of websites and to watch a particular video and prepare questions based on that video for the next lesson. Interestingly, I attended the lesson “Smart technology”, and in this lesson, students were encouraged to use smartphones and laptops.

Reflections

My first reflection was that of surprise. When I was a student, and later as an academic staff member, I had experiences of observing lessons, but I was surprised by these classes. The flow

of the lessons was the same but the approaches that the teachers used were quite different from what I had experienced as a student. For example, the relationships between the teacher and students were less hierarchical, and the teaching approaches were more active, involving teamwork, pair-work and information searching. However, this was not radical, learner-centered pedagogy. The teaching was aimed at covering the ideas and the materials as provided by a teacher, and students had less experience of contributing their own ideas, experiences and opinions to the class.

Next, I realised that the lessons did not entirely match what the teachers had said about using ICT in their interviews. For example, teachers KT2, KT3, ET2, ET5 explained the value of using PowerPoint in interviews but PowerPoint was not used in these lessons. This might have been because the classrooms were lacking the ICT resources. I felt the observations would have been different in different classrooms. For example, teacher KT3 showed me the language learning lab that she often used. This room was well equipped with two computers, a printer, books, and a projector. This room was bookable for all the language teachers to use. She also described one of her lessons which was conducted in that lab that used a projector and video editing with students from China. Here, the teacher explained me how she tried to introduce Kazakh culture to students from China by creating a cartoon with subtitles.

Another teacher, ET2, explained how he used smart technologies in practice lessons but did not have them available in the lessons I saw. Teacher ET5 informed me that they had a language lab too which was well equipped with technologies for practicing synchronous translation. In contrast, teacher RT2 was consistent; she explained her unwillingness to use ICT and did not use it in the lesson. My reflection was that six out of seven teachers wanted to use ICT and showed me the evidence they did use ICT. They were familiar with ICT tools and knew how to use the Internet. It was just in these particular cases that I saw there was so little ICT resources in the classroom, and so they had less opportunity.

Regarding the teaching and learning in the seven lessons, teachers showed me that they had suitable subject and pedagogical knowledge to lead the classroom discussion, to practise the use of grammatical structures and to provide accurate explanations of the subject matter. All needed to address different language levels in their classes. For example, KT1 had students from different L1 backgrounds (Kazakh and Russian) and, in practice lessons in English language, levels differed depending on past experience and level of motivation.

Teachers showed also knowledge of different forms of classroom organisation, for example, whole class, use of pair work, and whole group discussion, all of which resulted in good collaboration and communication among students.

In English practice lessons, Kazakh and Russian languages were occasionally used to translate some words and to explain the meanings of words. In Russian language lessons, Russian was used as the only the medium of classroom instruction. Teacher KT3 in their Kazakh language lesson occasionally used Russian to translate the words for the Russian speaking students. There were no signs of inappropriate behaviour by students. Teachers in all observations always led the class and the discussions. There appeared to be a productive relationship between teachers and students, as positive feedback was addressed to everyone who tried to answer the questions. For example, teacher KT1, every time when she led the students for discussion, she smiled and tried to encourage them with sense of humour saying, 'let's meet our future head of the school'. Teachers KT2 and KT3 supported students by using phrases like 'that's fine' and 'that's good'. Similarly, teachers ET5 and ET2 used positive expressions, and repeated words such as 'good' and 'brilliant' when responding to students. Teacher RT2 tried to involve all the students by asking questions to students one by one. When students gave correct answers, she also said 'good', 'excellent'. KT2, KT1, ET5, and RT2 showed they were pleased with the students' performance and readiness for the lesson.

Instructions and explanations in the lessons were clear. In terms of checking understanding, all seven teachers used clarification questions. I noticed that KT1, KT3, RT2 remained sitting during the lesson but other teachers monitored students by moving around the class. For example, ET5 would question students while they were preparing their dialogue practice. Teacher KT2 prompted students for more clarification. Teacher ET2 kept asking the students 'Is everything clear?'; if not, she asked other students to help explain to a student with a concern. RT2 did a lot of individual speaking in front of the whole class, providing more examples to help students' understanding of the new material. Likewise, when students struggled, teacher RT2 made comparisons between different language forms.

Teachers, whether observed or established by interview, had reasonable skills to integrate ICT into language teaching and learning. At the same time, I noticed how the teachers were enthusiastic and were as actively trying to use technologies despite of the lack of ICT resources, choosing to be trained by themselves, to buy their own laptops, and encouraging students to use ICT. In other words, teachers were motivated to use ICT without institutional support, by showing their commitment to teaching languages with a clear understanding that technology does not always improve language teaching and learning.

Summary of observation results

What was interesting in these lessons was teaching had changed since I was taught but it is difficult to say whether ICT had brought these changes. Teachers appeared receptive to new pedagogical ideas and were confident in what they were teaching. They were also receptive to use technology and often tried to find ways around addressing the limitations in accessing technology. The classroom observations suggested that if technology was not being used, it was not because of the conservatism and traditionalism among the teachers, but it was about problem of access. If there were more opportunities to use ICT, it is likely that teachers, as well as students, would have welcomed this.

The key findings from the observations were that:

- They were different types of lessons: seminars and practice lessons.
- Teachers wanted to use ICT and encouraged smartphones in the lesson and the use of ICT outside of the lesson.
- Classrooms lacked resources and teachers brought their equipment to address that shortage.
- Teachers were confident in their teaching and open to new ideas.
- Innovation in teaching focused on use of pair work, controlled practice and organised discussion. These made teaching much more active and engaging; it did not represent a shift to a radical learner centered pedagogy.
- Access to ICT was the key issue.

Interview

Interviews were carried out with language teachers from English, Kazakh, Russian departments and in this section, I will cover:

1. Language teachers' background and teaching experience, job satisfaction and obstacles they have faced in their teaching practice.
2. Teaching curriculum.
3. Teachers' views on pedagogy.
4. Teachers' ICT use.
5. Teachers' attitudes to ICT and beliefs on its impact.
6. Encouraging and discouraging factors for ICT use.

To put these perspectives in a wider context, I will include references to deputy deans, heads of departments and IT specialist within relevant sections.

Teachers' background and teaching experience

Table 39: English teachers' backgrounds and teaching

N	Teaching specialism	Teaching experience	Qualification	Courses	Gender
1	ET1	11-20	MA	ESL / ESP	Male
2	ET2*	0-10	MA	Basic English and Introduction to technology	Male
3	ET3	11-20	PhD	Basic English ESP and linguistic specialisms	Male
4	ET4	0-10	PhD	Basic English ESP and test preparation courses	Female
5	ET5*	11-20	Candidate of Philology(a lower doctorate degree)	Content specialism courses	Female

Table 40: Russian teachers' backgrounds

N	Teaching specialism	Teaching experience	Qualification	Courses	Gender
1	RT1*	21 and more	Candidate of Philology	Largely literature specialism	Female
2	RT2	0-10	MA	Basics of Russian Language and Literature	Female
3	RT*	11-20	Candidate of Philological Science	Linguistic specialism courses	Female
4	RT4	21 and more	Candidate of Philology	Linguistic specialism courses	Female
5	RT5	11-20	MA	Literature	female

Table 41: Kazakh teachers' backgrounds

N	Teaching specialism	Teaching experience	Qualification	Courses	Gender
1	KT1*	21 and more	Candidate of Philology	Linguistic specialism courses and Introduction to technology	Female
2	KT2*	21 and more	Candidate of Philology	Linguistic specialism courses and Introduction to technology	Female
3	KT3*	21 and more	Candidate of Philology	Linguistic specialism courses	Female
4	KT4	0-10	MA	Special purposes courses	Male
5	KT5	0-10	MA	Basics of Kazakh language and special purpose	Female
6	KT6	11-20	Candidate of Philology	Linguistic specialism courses and introduction into translation	Female

* These colleagues were also observed

Table 42: Faculty leader backgrounds

N	Deputy Deans	Role	Years of teaching experience	Years of experience as a dean
1	D1	Faculty leader / teacher	24 years	4 years
2	D2	Faculty leader / teacher	20 years	1 year

Table 43: HoD backgrounds

N	HoD	Role	teaching experience	as a HoD
1	AH	HoD / teacher	15 years	1 year
2	KH	HoD / teacher	25 years	2 years

Teaching experiences

In terms of teaching background, all interviewees were well qualified, each had a Master's degree and most of the experienced teachers had a candidate of philology award (a lower doctorate degree). This shows that there was a mix of teaching experiences.

Table 44: Teaching experiences of interviewed teachers

Teaching experience	Teachers of Kazakh	Teachers of Russian	Teachers of English
0-10	KT4; KT5	RT2;	ET1; ET4
11-20	KT6	RT5	ET2; ET3; ET5
21 and more	KT1; KT2; KT3;	RT1; RT3; RT4	

The majority of the teachers were experienced; although, interestingly, there were no English language teachers with more than 20 years of experience. All Kazakh language teachers had gained their qualifications from the case study university and on completion, found work posts at the same university; however, four of them also had experience of working elsewhere. Four Russian language teachers were also qualified from the same university and continued working at the same university; only one of Russian language teachers had worked at a different university beforehand. The four English language teachers had acquired degrees outside the case study university, one had gained her degree elsewhere and worked in a different university before her role in the current university. Overall, teachers in three departments appeared prepared and experienced in teaching and confident of their subject knowledge.

As for the deans and head of departments, all had gained their qualifications at the case study university. All had begun working at the university as a lecturer and had substantive teaching experience. Interview data from the leaders helped put teachers' ICT use in a wider context; for example, they had a better idea of the role of the central university in promoting technology.

Overall, leaders had a wider understanding of issues related to curriculum, access to resources and training, as well as pressures that came from beyond the classroom.

Influence of background on use of ICT

From the survey data, it was seen that age, experience and gender did not make a substantial difference to ICT use. In the interviews, this was confirmed. For example, both Kazakh and Russian teachers (where the majority was experienced) and English (who were mainly less experienced) were all positive about using ICT.

For example, RT4 reported:

“The new generation of students are active users of technologies. If, as a teacher, I could help them in sharing useful applications and Internet resources, they could benefit [from this], making their learning much easier.”

Even the teachers with more than 20 years of teaching experience in all three subjects discussed the role of ICT in the teaching process in a positive manner, showing their awareness that they were dealing with a generation who were born with digital technologies. For example, KT2 stated that:

“Every year when I have new students, we create our own chat groups. For example, I have my MA students’ cohort – whenever they need any support from me, I am available online, but we have certain rules to all students who are willing to join the group.”

Teachers, regardless of their gender, reported that they felt they were obliged, as part of their commitment to their students’ future profession to provide opportunities to expose them to new technologies. As put by ET2:

“Technology has led to a catalyst change in language teaching and learning, now you can learn languages from everywhere and anywhere and for free. This is the teachers’

responsibility – [to] understand the value of ICT in teaching if you want to make a change in your classroom.”

However, there was an important difference between teachers who had gained their degrees from other universities and had some teaching experience elsewhere, compared to those who had studied at the case study university and had gone on to work there. The former appeared to be more interested in using ICT. This was because these teachers had been provided with better equipped classrooms and had wider experience of using ICT in the past. The latter group had as much interest in using technology but lacked the breadths of examples that the former group had experienced.

The motivation to teach and teaching satisfaction

This section is divided into what satisfied and what dissatisfied teachers in their work.

Satisfaction with teaching

Tablr 45: Teaching satisfaction

Theme: motivation to teach	Sub themes	Number mentioning	Number of times mentioned
1	Attractive work conditions	16	24
2	Identification with the role of a teacher	17	23
3	Satisfying relationship with young people	11	12

In general, teachers were motivated, and the reasons were three-fold: (1) attractive job conditions; (2) satisfying relationships with young people; and (3) identification with the role.

Many of the teachers were fell under the sub-category of being ‘*attracted by the job conditions*’.

However, it should be noted that what was most attractive was the work life balance rather than salaries or conditions, such infrastructure or resources. This was particularly important for

teachers with families, especially females who in Kazakhstan, were expected to take on the major share of the housekeeping duties. For example, RT4 stated:

“I love my job because it makes my life manageable. I have time to take care of my children and at the same time to work. I learnt this lesson from my mother. She worked full-time office hours from 9 a.m.-18 p.m. and I really did not want to have the same working hours being busy all the time, for this reason, this job suits me perfectly.”

But interestingly, one of the teachers, RT5, thought that new innovations were threatening their work-life balance, stating that:

“Before, I could better manage my time balancing work and family but now it is hard because of innovations that transforming the Education system of Kazakhstan.”

When it came to male teachers, their motivation to teach was more instrumental based on having a qualification and being attracted to the work conditions. Some compared HE favourably to other jobs. For example, ET2 stated that:

“I worked as a receptionist at a hotel, then decided to work with my teaching qualification and I loved it. I understood that it was mine.”

Some teachers identified with ‘a role of a teacher’ because of experiences in the past. For example, one of the teachers was attracted by a desire to change teaching for the better:

“Honestly, I love my job and when I chose to study Kazakh philology for second language learners, my aim was to change the Soviet culture and to improve the status of Kazakh language, seeing two Kazakh girls talking in Russian had impacted to my choice of profession and I wanted to change it.” (KT1)

Some of the teachers had identified with a role of a teacher when they were students at school. They were interested in what their teacher was doing and believed that one day, they could do something similar. For example, KT3 stated that:

“My love to be a Kazakh language teacher started from school age. I was lucky to have a very good inspiring teacher; because of her, I became passionate to teach Kazakh language.”

Some female teachers were not so decisive about their identification of a teaching role and were encouraged by their parents. For example, RT1 stated:

“I took the advice from my mum, she was a doctor and I thought I was going to be a doctor too but she gave me an advice to choose something different, like teaching, explaining [to] me that it gives me a lot of free time and it is not as demanding as being a doctor and also, there is a possibility to develop yourself all the time and I never regretted [it]. I really like my job especially I enjoy working with students.”

As illustrated in the table, the reasons for being satisfied in teaching were associated with it being a ‘respected’ profession. This was particularly expressed among Kazakh language teachers. For example, KT1 felt respected because teachers were responsible for passing on the knowledge from generation to generation.

“It is our responsibility to transfer the knowledge, to inherit the values and to make them feel responsibility before the next generation for this reason it is an honourable job.”

KT3 believed that her satisfaction in teaching was strongly associated with being valued as a teacher:

“When you meet new students each year, they were so suspicious; however, when you see them again at the end of the term, you can see the trust and feel the respect. As a teacher, I can get recognition from the department or a reward from the Ministry of Education but being valued among the students gives more satisfaction.”

Thirdly, the motivation to teach was also related to establishing ‘*a relationship with students*. This seemed to appeal more to teachers with less experience, perhaps because there was a less of an age gap with students. For teachers with more experience, the relationship with students was more distant but professionally satisfying. For example, KT2 reported that:

“I remember my son once complained about me loving my students more than him.”

Teaching is a profession that involves making connections with other people, and this allowed teachers to develop relationships with fellow teachers and other university professionals, making friends or experiencing tensions with some. However, the core part of their professional relationship was with the students, and most of the teachers across the three departments found this relationship as satisfying because they enjoyed sharing their knowledge with students and helping shape students’ lives. Their relationship was productive rather than antagonistic in the classroom. For example, ET2 said that:

“I love sharing my knowledge with students and this gives me satisfaction.”

A number of teachers were particularly pleased with teaching and were likely to talk positively about students from all backgrounds. For example, KT1 explained:

“What I like about my job is seeing a class full young, energized people as you have been witnessing today, students with shining eyes when you see them, you get energized too.”

Also, teaching students that are different from the previous generation was a source of satisfaction for some of the teachers and ET5 is glad to teach because:

“The students that I taught within these five years of time are a way different in terms of their intellect, [they are] more intelligent, and so curious compared to the previous year’s learners. They have got more theoretical [basis]. To tell the truth, I learn a lot from them”.

Finally, one of the teachers (KT6) found teaching to be something that constantly develops and found satisfaction in working on her teacher’s teaching skills:

“I love working with young people but also language is a living thing and never stops developing in teaching approaches, methods which tend to change, improving by chronological events. And as a teacher, I have to improve myself to meet the demands of time.”

One of the important reasons for some teachers was the involvement in research, which meant having an opportunity for self-development. ET5 said that:

“Working in academia is always related to research and that’s what I am passionate about. It gives me a lot of opportunities for self- development, exploring yourself from different angles, meeting new people, and sharing ideas.”

Dissatisfaction with teaching

Although all the teachers gained satisfaction from their work and felt motivated to teach, they also experienced a number of dissatisfactions from time to time. Teachers’ dissatisfactions were grouped under three themes including: (1) Lack of resources; (2) Working conditions, and (3) Salary.

Table 46: Teaching dissatisfaction

Teaching dissatisfaction				
	Sub themes	Kazakh teachers	English teachers	Russian teachers
1	Lack of resources	KT1, KT2, KT3, KT4, KT6	ET5	
2	Working conditions (management, classroom conditions, bureaucracy, workload)	KT2	ET1, ET3, ET4	RT4, RT3
3	Low salary	KT1	ET3	RT3, RT4

The most important reasons for dissatisfaction were working conditions and lack of resources.

‘Lack of resources’ was described as critical among Kazakh language teachers. For example, one of

the teachers (KT1) concluded that many students were not interested in learning Kazakh because the department lacked a virtual learning environment:

“At the university, we provide online courses, but we still haven’t got a platform for Kazakh language learners. The department had a plan to create one, but we are waiting for resources. There is a need among students as they prefer learning virtually rather than in traditional classes.”

In addition, Kazakh teachers also experienced a lack of hard copy books, KT3 stated:

“We do not have enough books to teach. Even the books that we do have now need to be improved or updated, and the problem lies not only in a lack of technological resources or financial resources, but a lack of highly qualified professionals to write these books.”

KT4 was not satisfied with the content of teaching materials as they did not suit their students’ level:

“So many times, teachers requested to teach students according to students’ levels, but every time this is unsuccessful, and we are not being heard especially when there is a lack of books for beginner level students.”

Here, the teacher was frustrated, suggesting not just an issue with mixed ability classes but the lack of communication between teachers and leaders.

English and Russian teachers had fewer complaints about teaching resources but ET5 also complained about books:

“To find books on theoretical subjects in English language teaching, I am so tired of not having enough teaching resources for teachers.”

When it came to ‘*working conditions*’, teachers raised four types of dissatisfaction which were management style, classroom conditions, bureaucracy and workload.

The majority of teachers when they discussed the issue of ‘*management style*’, referred to top-down or an authoritarian style. For example, RT4 stated that:

“All the problems arise from management; it is irritating because all the teachers know that most of the problems could be easily solved without the paperwork.”

ET5 complained about meetings with managers:

“I like my job, but I am tired of meetings with managers of the departments and higher authorities. Once a week, we have regular round tables where the discussion around the same topics, university ranking, development strategy and so on.”

One of the sources of dissatisfaction in relation to ‘*working conditions*’ lay in ‘*classroom conditions*’.

There was restricted movement in the class, and this was mentioned by number of teachers, who complained about having rows of desks with chairs and viewed this style as an inheritance from the past. ET2 was dissatisfied about not being able to rearrange the classroom in a more suitable way for language teaching.

“I want changes in terms of desks in the classroom. They are not comfortable –[a] class full of big desks and heavy chairs which limits the free movement of the students during the lessons.”

RT2 also wanted to have some freedom of movement to be creative with her teaching:

“One of the obstacles that we face daily is the arrangement of the classes for typical lessons. The conditions simply are not suitable and limits the creativity of a teacher.”

Similar issues were mentioned by ET4:

“I have seen language classes in other universities, but this is not our reality.”

In relation to ‘*bureaucracy*’, teachers, across all departments, commented on the considerable amount of paperwork and its negative consequences for teaching as KT4 explained:

“While you are teaching sometimes, your mind might be busy with paperwork for administrative purposes and that impact on your teaching quality.”

A further issue was keeping records in three languages in line with the idea for promoting a multilingual society (see introduction). This involved a lot more paperwork. This was a challenge that HoDs also appreciated and KH commented that:

“As we are a multilingual society, a three-language policy has been promoted. There is a need for Kazakh teachers to learn these languages because for example, the language of technology is English [so] we need to know English but as we mainly access the information in Russian, we need Russian. But in relation to Kazakh language, there are limited resources, even the existing websites are poor. Teachers can search for resources in the English language, but they do not understand them.”

Teachers also discussed difficulties of bureaucracy when trying to invite experts from other countries; KT2 said:

“Bureaucracy is everywhere in the whole education system of Kazakhstan and that is the truth.”

Some teachers were dissatisfied with their ‘salary’. For some, the workload placed considerable pressure on teachers and that having to commit to social activities in the department, alongside teaching duties, and meeting the requirements of annual review meant that they were not rewarded enough. ET3 added:

“These days, working in HE is too demanding, and it is difficult to be promoted without article publication, [and] conference attendance including international, [and] regional ones. However, teachers’ salary is not enough even to cover at least one of your publications when considering the cost of translation or an agency to help with editing.”

The deans were equally concerned about work conditions and spoke about their own long working hours. D1 commented:

“It has been very difficult to balance my job with my family life as well as growing professionally like writing articles, attending conferences. I had fixed scheme[s] of work from early nine to six [and] I stayed at work. All year round. We have students from different countries, which made my schedule too difficult to rearrange according to their plans, even my weekends.”

Current challenges

The teachers were often concerned with their own classes and how best to teach them, while deans and HoDs were concerned about the wider issues such as staffing and international reputation, as well as the role of university in global context. Part of this role involved benchmarking against other universities. In the case of technology, this meant benchmarking against universities that had a good reputation in the establishment of technology for their learning, teaching and university management. D2 in this regard stated that:

“For example, regularly we do online discussions, trainings with [Turkish] universities, universities from Russia and so on. We also organize online trainings, seminars with other universities within Kazakhstan and with other international partner universities”.

D1 believed that the university had good ties with universities from CIS countries and this helped keep their reputation.

“Our university is now one of the high ranked universities in Kazakhstan. By QS ranking system, our university has ranked 36th in the list of universities. Every university works to protect its image. But again, you cannot compare our university with high ranked autonomous ones with their long history within Kazakhstan, we are working very well and between CIS countries.”

When the HoDs were asked about the current difficulties, AH referenced a gap of qualified professionals (teachers with PhDs), two diploma programmes, and publications in high impact factor journals. She believed that within the education process, there is a problem stating that:

“The biggest problem at the department is a lack of teachers with PhD degrees. Second problem [is] providing opportunities [for] two diploma programmes to our students. We are trying to make an agreement with overseas universities, but the number of credits and the disciplines of foreign universities do not fit with our system and this [is] causing a lot of difficulties. This problem is putting [us] under considerable stress [with] most of the teachers having publications with Scopus. Other than that, within the education system everything is the same as usual.”

Curriculum

Table 47: Teachers’ perspectives on the curriculum

N	Subthemes	Kazakh teachers	English teachers	Russian teachers
1	Constant change (seen both positively and negatively)	KT2, KT3, KT4, KT5	ET2, ET4, ET5	RT1, RT2,
2	Design (seen as top down)	KT4, KT5	ET1, ET2, ET3, ET4, ET5	RT1, RT2, RT3, RT4, RT5
3	Relevance of courses (seen both positively and negatively)	KT2, KT3, KT4, KT5	ET1, ET2, ET4, ET5, ET2, ET4, ET5	RT1, RT4

Constant change

In order to understand teachers’ perspectives on the curriculum, questions about design, and strengths and weaknesses of curriculum were covered. To put this section into context, as already seen in the introduction chapter, teachers from the three departments followed the

Ministry of Education's guidelines and designed their curriculum within the frame of the standardised state programme.

The data on the curriculum are analysed around three subthemes: constant change, design and relevance.

'Constant change[s]' were being made to the curriculum and ET5 further pointed out that:

"There is a requirement in Education programme to make a 30% change in the curriculum every year."

KT4 added that these changes were still happening, but there were not only management changes but language ones as well:

"Our country is at the stage of reformation, the Cyrillic alphabet is changing to Latin, referring to it, I included a lot of changes in the curriculum."

Teachers largely felt change to be positive; they felt that changes were often worth while. For them, change was inevitable if you reflected on what you are doing and wanted to improve.

Change could also be organic as a result of teacher turnover. ET4 commented:

"If the staff changes, they want to update them. Now we have more young teachers in our department with a new vision on everything."

This came from English teacher in a department in which there were more young people and pressure growing for a bottom-up change. However, change was not easy to implement. RT1 explained that she wanted more flexibility and that was not available:

"I have to follow the curriculum, but it is very difficult to be fixed with it because teaching is a job that demands creativity."

The problems was not change in itself, but in concerns about what changes were being made and changes which were enforced. In respect to change, deans were more aware and concerned about the wider pressures on universities. As D2 commented:

“Since I became a dean, I could not say that I have made some improvements or changes. But the changes within the system of education have been happening by entering the Bologna process. And the changes are still happening. For example, this year, we are introducing a new programme which gives students a variety of choices within their programme of study. Before we offered them one programme but starting from this, they can choose three programmes. If a student wants to study economics, they can choose interrelated disciplines based on their interests such as law, politics and so on. It means they have the right to choose three programs within one specialty. But these changes cause difficulties for teachers to adapt.”

How is the curriculum organised and how is change implemented from the leaders' perspectives?

Leaders were key factors in the implementation of changes in the classroom teaching and curriculum content. Both deans and HoDs noted that there was more flexibility in the curriculum with the MOE introducing changes, such as joint degree programmes and new courses. The MOE was powerful, but teachers had more flexibility and were expected to become more 'client based'. In this regard, D2 stated that:

“With these new changes, teachers have freedom to make changes in their programme. The scheme of the programme comes from the MOE; however, based on students' interest or based on employers' interest, teachers can offer elective courses. In this way, they can make improvements. But first they discuss it with methodological bureau, after their approval they can be included in the programme.”

D1 talked about the process of curriculum development. It sought to be relevant to learners and was introduced carefully. ICT was expected to be used.

“Every subject teacher is responsible for the syllabus. Also, they are responsible for making programmes relevant. Before designing the syllabus, they need to read all the literature [and] materials in order to design a syllabus that meets the needs of the students. If a new subject is introduced, there will be given two years to experiment before full integration into the teaching process. During this probation period, they can make changes. After that, this syllabus will be discussed at the researchers’ collegiums, then it should be approved from the methodological bureau. The structure, the given time, the content... everything will be considered, also the requirements include technology use as well, we should include links, video materials in the syllabus.”

Heads of department provided more detail on the process. AH explained why flexibility was introduced, mentioning the student mobility programme and joint degree courses.

“Before we worked differently, following thematic plans that came from [the] MoE. These plans included everything clearly stating the aim, themes that should be covered, list of the literature to every discipline. But since the last year, [the] MoE gave us much freedom, only providing us with a general scheme of work with indicated credit hours. In relation to this, lots of changes have been made, some disciplines were removed, some were developed. All these changes were made to be compatible with European Standards of Education in order to cooperate with them in joint diploma programmes and students` mobility programme.”

AH explained how curriculum planning began at the department level, pointing out how the process involved collaboration with the MoE.

“Our department consists of two courses or disciplines: foreign languages and translation. Some teachers work with foreign languages, some work with translation. We have two

programmes for baccalaureate, three masters and two PhD programmes. Each programme has a coordinating person which works with the working group. These working groups have mixed members, they are responsible to meet with the members of the department and to raise the questions by looking at the old plans, discussing its strengths and weaknesses. Taking consideration of all the suggestions, we offer a new improved curriculum to the MoE, all these should be done in collaboration with coordinator from [the] MoE within the given time frame. The changes which are happening now were the product of three years of work.”

KD also commented that:

“Teachers design the curriculum; however, while designing, they have to follow the certain structure. We received a new design from [the] MOE and currently the coordinators from each department were at the meeting discussing the new design.”

Perhaps because of the input of the MoE, teachers felt that curriculum ‘design was still top-down’ and RT4 spoke about the limitations of the curriculum stating that:

“We design the curriculum depending on [the] MOE’s guidelines. I do not have the freedom to teach what I prefer or what is based on my students’ interest. However, elective courses give us more freedom to construct the curriculum based on our expertise considering students’ interests.”

For ET2, curriculum design began with the Ministry of Education and “*then it was approved by methodological bureau, after the dean of the faculty, finally by the rectorate*”. Despite the fact that curriculum was ultimately controlled, a number of teachers believed that they had a degree of freedom. For example, RT2 stated that:

“As an experienced teacher, I design theoretical content subjects myself also, there are some courses which are designed by other experienced teachers as well.”

This is a key point. The process was top-down but there was a degree of cultural acceptance of this, notwithstanding tensions that were reported earlier. It was also a common cultural practice for teachers to accept what they were being told to do. Teachers were well-aware of this cultural context; for example, one of the teachers (KT4) noticed this as a Kazakh mentality and complained:

“Even if I find contradictions in the curriculum, I do not say anything. If you are a young teacher, it is a real challenge to give suggestion because of our mentality. Senior teachers would consider it an impolite act, showing my disrespect for their expertise.”

Relevance

Views on the ‘*relevance of the curriculum*’ were similarly divided. A number of teachers thought the curriculum was ‘*relevant*’ since it had been approved by authorities, as well as students. RT1 stated that:

“I have never heard any complaints from my students regards course content but sometimes colleagues give some recommendations. As a rule, a curriculum has an aim, distinctive structure, skills to be achieved. If it does not meet those requirements, it cannot be approved.”

Additionally, KT5 found that the content of teaching material matched students’ interest.

“The curriculum has been designed by professional, experienced teachers who taught the course before me. I found it suits students’ interests and never heard any criticism from them.”

Teachers provided examples of adapting the curriculum to student interests:

“First, I sent my curriculum with whatever possible way (email, ed platform) to my new group of students in order to get feedback. Then I openly discuss with them all the proposed

changes, critically evaluating the relevance of the curriculum with them but in most cases, students are reluctant to give any feedback.”

Some teachers considered the curriculum was ‘*relevant*’ as students were successful in tests. For example, RT4 stated that:

“From term exam results of the students, I know how the curriculum meets their expectations, if they do well it means that they have taken it seriously, preparing well in order to meet the course expectations.”

Others pointed to students’ evaluation of teaching, with RT5 saying that:

“Based on student returns, I can see how they like the course I teach.”

ET4 felt that the curriculum was also ‘*relevant*’ and suitable for EFL as it was based on the resources available in the library:

“The content of the curriculum is designed using the books from the library which are easily accessible for students such as English file, Solutions. The books are for SLL and have all the relevant material for their level of interest.”

A few teachers also spoke about the role of the technology in reference to curriculum design, in this respect, ET2 stated:

“In order to maximize its relevance, we try to include in the curriculum extra materials from Internet also. It is important to include the links that might be useful websites for students.”

Another teacher, ET5, gave a suggestion to overcome the problem of the lack of resources such as the need for e-versions of English books, by making them more affordable and accessible for students:

“It is time to write our own English books published in Kazakhstan. The books that come from overseas are expensive and not all the students can afford them. Also, it would be better to have e-versions for students’ ease of use so that every student can access them.”

However, some skepticism was expressed about curriculum relevance. Some of the teachers found it difficult to take a view on relevance. KT3 explained:

“It is a very difficult question but difficult to answer. I keep asking this question to myself too. If it meets their needs, why do we still face problems to increase the number of Kazakh language learners?”

Although some are aware of specific gaps. One teacher (ET5) spoke about the lack of focus on intercultural communication:

“After gaining independence, a lot of changes have been made in relation to the Two Foreign Languages curriculum. But when I carried out some research on other country’s experiences, the curriculum is more focused on Intercultural communication, however in our case this has not been taken seriously yet.”

A further point was made by KT3 who spoke about one of the weaknesses of the curriculum and found it irrelevant in terms of students’ level:

“I remember that I was involved in a very good project that was aimed to design a curriculum according to learners’ levels which was a big issue in Kazakh second language teaching and learning. I was responsible A1, A2 level audio materials but with the shortage of funding it wasn’t finished yet.”

Pedagogy

Building on the exploration of the curriculum, teachers’ views on teaching are described around the themes of ‘creativity’, ‘variety’, ‘adjustment to context’, and ‘assessment’. In general, teachers

preferred being creative and felt that teaching should combine different approaches. In relation to pedagogy, teachers seem to be pragmatic and adjust to context and were aware of the assessment demands made on students.

Table 48: Teacher’s perspective on pedagogy

N	Pedagogy	Kazakh teachers	Russian teachers	English teachers
1	Creativity	KT6	RT1	ET5
2	Variety	KT6, KT4	RT2, RT5	
3	The need to adjust to context		RT3, RT4	
4	Assessment driven	KT6, KT4		

Creativity

For example, RT1 saw ‘creativity’ by following a prepared plan with adjustments to the class context.

“I do plan my lessons step by step, but I do not follow my prepared plan implicitly because of the situations that might never be predicted. I try to be as creative as I can. For example, in teaching literature, I do not like teaching just focusing only on one author’s work. I like teaching students [by] comparing different authors’ work doing pair work, group work, or giving individual tasks.”

KT6 believed that every subject could be taught creatively ‘if you have pedagogical skills, subject knowledge and ICT skills.’

Variety

When referring to pedagogic principals, teachers spoke about the need ‘for variety’ rather than adherence to formal theory. KT6 felt that teaching should be flexible, combining different techniques to maintain student involvement.

“This generation is quite different from previous students and in order to obtain their interest, it would be better to switch to different techniques after every twenty minutes like: karaoke singing, watching videos, in the language teaching classes. When delivering long hour lectures, I prefer after fifteen minutes lecturing to pose trigger questions to involve students to debates, creating discussion around specific topics.”

KT4 also suggested that teachers should use a combination of different activities if students were bored and unable to concentrate anymore. RT2 saw her learners as ‘*easily bored if you teach them by just focusing on course book, and that using Instagram in teaching is very involving*’. As we see later, technology was important in providing variety and RT3 comments that:

“Some students like learning visually, some learning from like audio listening; for this reason, I would have shown them videos, or authentic Instagram posts critically analysing their languages of the posts in the class.”

Adjusting to context

Of course, pedagogy had ‘*to adjust to context*’ and teachers discussed coping with 50-minute lessons when they had been used to longer one. RT4 suggested to include portfolio as an extra activity.

“I remember quite well when I started first doing portfolio with my students. This gave me an opportunity to see my students’ reflections. As we now teach only 50 minutes, which is not enough for me to design my lesson as I wish, I included portfolio as an extra activity to track my students’ best work and showcase them by providing more time for my students for self-assessment for their learning process.”

Assessment

Showing students making progress was important and this meant being aware of assessment demands. KT4 stated that:

“What I noticed with beginner-level students, it is difficult to motivate them to learn a new language [like] Kazakh because it is a compulsory subject, not an elective course. As students have low level of knowledge, they need to put a lot of effort. However, if students know that they need to meet certain criteria and they are going to be marked to achieve that, they take it seriously.”

ICT use

Table 49: Teacher’s perspective on ICT use

N	Subthemes		Kazakh teachers	English teachers	Russian teachers
1	ICT during the lesson	Projection	KT4, KT3, KT4, KT1	ET4, ET3	RT1, RT5
		Creative use of ICT	KT5	ET2	RT2, RT5
		Use of ICT with purpose	KT3	ET1, ET2, ET5	RT1
2	Use of ICT outside the lesson	Compensating for classroom time constraint	KT4	ET,5, ET2	RT1
		Lesson preparation	KT2, KT3, KT4	ET1, ET5	RT3, RT4
		ICT for staying connected	KT3	ET2, ET5	RT3

This part looks at the use of ICT during or outside the class. As a reminder, in the survey, different uses of ICT were quantified. In these interviews, the key thing that was brought to light was the way that technology served different pedagogical purposes. For example, ICT covered tools like desktop, laptop, IWB, smart phones, SNS, tape-recorder, and different applications such as search engines, dictionaries, chat groups, and Video Script (which is a programme that

makes videos). These tools were used to support the activities used in the lessons including essay writing, commenting, vocabulary learning, and communication.

ICT during the lesson

In lesson, use of ICT covered ‘projection’, ‘creative use’ and ‘purposeful use’. The most common use of ICT was the ‘*projection of slides and other material*’ to students. This depended on access to equipment in the classroom, but there were ways around this; for example, one teacher sent her presentations to students so that they could see them on their smart phone. Other teachers preferred to use laptops which they brought to the class and to be used alongside a portable projector they had loaned. As KT3 explained:

“During the lessons, I mostly rely on my laptop. I have everything ready in my laptop. For example, I play the audio material (a dialogue or any conversation, video clips) for listening purposes. I also have to bring my wireless speaker to make students hear well and, if I want to show my presentation, I have to carry the portable projector from the department. It has a good use among teachers. But sometimes I am too lazy to carry my laptop to every lesson.”

Most felt ‘*projection*’ to be a successful strategy. For example, KT3 remembered how presentations with the projector ‘improved’ students’ memory and help them reflect better:

“I remember the lesson where I taught students [about] Kazakh national holidays. I used the equipped class ‘Arna’ and made my presentations, I also showed them short video clips, cartoons with subtitles. After this lesson, I noticed that when students came for my next lesson, they could remember everything.”

Another teacher, ET4, mentioned the advantages of doing presentations during the lessons, saying that:

“During the lessons, I mostly like doing presentation, it helps me to organize my thoughts and also makes easier to show the important points of the material. Sometimes I use

English textbook CDs which have practice exercises to each unit just to review the weekly learnt material.”

Many teachers integrated listening exercises or multimedia into their presentations to make lessons more engaging and to be able to cover speaking and listening skills.

Teachers’ discussed applications of technology in the classroom which were ‘*particularly creative*’ and went beyond standard projection of presentations. Teacher ET2 shared one interesting experience of using ‘Video script’ in the class when he was teaching new vocabulary and spelling:

“I like using the programme ‘Video script’ to make animations. For example, I can choose the names of the characters, style of the video, music. Students do the spelling check by watching these videos then write down the word and visually learn a new word at the same time.”

Another teacher, KT5, showed her interest in using a wider range of applications in language class and mentioned an online quiz-making programme.

“There are many free applications online to make your own revision quizzes. One of my colleagues advised it and I found it very useful, but now I can’t remember [what] it’s called. For example, I share the link in the class, students can go online during the lesson just on their smartphones and do the revision quiz.”

RT2 gave an example of engaging students in research in order to enhance their reading skills, particularly reading comprehension, with the help of eBooks:

“I remember once I and my students did research on positive and negative sides of e-books compared to hardcopies in order to raise their interest in reading. Students themselves actively engaged in a survey and results showed that young people were more likely to use eBooks compared to hardcopies. And now I and my students like using eBooks and carrying the laptop instead of carrying textbooks.”

One of the Russian language teachers, RT5, shared her interesting experience with Instagram.

“We have our Instagram page where my students’ post their posts raising the questions related to Russian language and literature to the wider audience and students were asked to comment too. However, during the lessons, we look through the comments and choose the best one.”

Many teachers seemed to have a clear understanding of ‘*how different tools could help achieve different objectives*. ET1 stated that:

“I used all kinds of technologies depending on my pedagogical purposes as they are closely related the skills, I am expected to improve according to my annual review plan. For instance, audio-video materials are used for listening skills, CD tests for grammar and so on.”

KT3 offered a good example of understanding the pedagogical purpose of technology, in this case to support a new approach to the order of curriculum teaching:

“Last year, I taught students from China. As a rule, when we teach Kazakh students, we start teaching grammar rules, sentence structure. But with second language learners, I came up with [a] different approach, focusing on listening and communication skills. And technology played a great role in my everyday teaching at that time. For example, instead of reading grammar rules and doing exercises, I prepared a short video clip with a subtitle, then we discussed together the plot of the video, characters and the grammar.”

Interestingly, one of the teachers, ET2, supported the use of ICT in order to provide more exposure to technology for students and said that:

“Students were introduced to the use of ICT from [the] Smart Technology course. I supported their use of ICT to improve their ICT skills as well as language skills as they will help prepare them for their future teaching practice.”

Finally, RT1 added that technology should be used with a clear purpose in mind if students were to benefit from it.

“We know that students all like gadgets, but our aim is as teachers to use them for learning purposes. Technology is very good when it’s used with the purpose of improving students’ learning skills. For example, comparing two authors’ work making search of their work on the Internet.”

These examples show that some teachers at least were reflective in their use of technology and thoughtful about its application.

ICT outside the lesson

ICT ‘*outside the class*’ covered such tools like desktop, laptop, chat groups, SNS, and different applications such as search engines, dictionaries, and chat groups. These tools were used to ‘*compensate for classroom time constraints*’; ‘*lesson preparation*’; and ‘*general communication*’.

A key reason for using ICT outside the classroom was to ‘*compensate for time constraints*. KT4 explained his use of ICT outside the classroom was designed around curriculum objectives, but because of time constraints during class, he needed to give opportunities for students to access authentic language. For example, he took them to the theatre:

“The truth is students speak Kazakh during the 50-minute lesson. But when the lesson finishes, they again start speaking in Russian. For this reason, in order to support their exposure speaking in Kazakh, I give them extra activities as a homework, or I take them to the theatre with their recorder to improve their listening. For example, I ask them to listen to their recorded play at home and to pick out the tricky words, then in the class, we discuss those words, and they make new examples with them.”

Additionally, ET5 added that she preferred the use of ICT mostly ‘*after the lessons*’ as she experienced time constraints and wanted to support students’ self-learning.

“I prefer using ICT after the lesson because sometimes it wastes my time to browse the websites or to fix the overhead projectors actually in the class. For this reason, I asked my students to find information about ‘food now and then’ and to write an essay what we are eating now and what our parents ate in the past using different forms of tense and they can send them to my email.”

In another example, one of the English teachers gave extra practice by having students use assigned CDs that supported their course:

“For after class activities, I ask my students to do exercises on [the] CD that comes with ‘English File’ students’ book. As a rule, English textbooks have a very good CD that has practice revision activities for each unit. So, I can ask my students every week or twice a week just to review all the lessons we did during the week and do the activities at home such as grammar tests.”

‘*To prepare a lesson*’, most teachers found the Internet very useful for accessing material. ET1 explained that she used Google to search for learning activities to encourage students’ engagement:

“I use Google a lot to search extra online activities for writing skills, because a lot of the students struggle to write good essays so, they follow the steps for writing a first draft, learn about topic sentence, things like that.”

KT2 also searched the Internet for topics and shared with her ideas saying:

“Next week, I am going to discuss the topic in my language teaching methods course, [and] Methods in teaching Kazakh language, but I am not going to limit my students by only

looking in Kazakh language methods. I will ask them to Google for Russian [and] English language teaching methods.”

However, in this example, KT2 mentioned the importance of controlling the content of search material.

“I do not doubt the idea of ICT supporting learner centeredness. But the difficult question is how is the learner learning? What resources do they access? When I ask them to search for information, I need to double check the sources, students are not good at sorting out the information they need.”

Some teachers recognized the importance of online communication to stay in contact with students. For example, they might receive students’ work by email and give feedback in the same way. In this regard, KT3 stated that:

“I use emails to receive my students work, for example, if they have a task to do, they send their first draft by email, then I give my feedback after they send me their second draft. This way, they learn how to organize it and make a good presentation, otherwise, they put everything just copying from the books. After, when they get my approval, they do their presentation in front of the class.”

RT3 had gone further and created a WhatsApp group in which students could contact them more quickly:

“I have a WhatsApp chat group where I share very urgent information with my students. In any emergency, they can contact me there.”

Another teacher, ET5, explained why she used emails during exams:

“I use emails a lot during exam times because students need support at that time in order to support them. I share useful information from different links to support them mentally.”

Attitudes towards ICT and beliefs about impact

Table 50: Attitudes towards ICT and beliefs about impact

N	Subthemes	Kazakh teachers	English teachers	Russian teachers
1	Positive attitudes	KT1, KT2, KT3,	ET3	RT1
2	Impact on learning	KT2, KT3, KT1, KT5	ET4, ET5	RT4, RT2
3	Beliefs about ICT	KT2, KT6	ET2	RT3

Positive attitudes

A second contributor to their commitment to use ICT lay in their ‘attitudes towards the use of ICT’ and their belief that ICT could impact on learning, or at least that ICT was worth exploring as it has potential to have an impact on learning. For example, KT2 was driven by a positive and curious outlook:

“When we first started integrating the technology, I was not scared of using them; instead, I was so curious to discover them more and to use them more.”

In another example, KT3 stated that:

“Computers made our life much easier. I have always been so interested in new technologies. And when my husband bought me my first computer, I was so happy. At that time, I was struggling with my typing machine and when I saw the advantages of the computers, I just loved them and was so curious to use them.”

Closely related to personal qualities were the attitudes towards ICT. Teachers with positive attitudes thought that they should engage with computers even when not sure of their ICT skills., ET3 stated:

“From my point of view, language teachers need to know the use of technology in teaching and learning. It helps them to make their lessons more interesting and engaging, but I am not a good user of ICT compared to young teachers, but I still use it”.

Apart from its impact on learning, several teachers were enthusiastic about using ICT because of ‘students’ positive attitudes’ to technology. For example, RT5 stated that:

“Students like the lessons where technology is used. Sometimes I hear them saying that they have been bored at the previous lesson, but they enjoyed my lesson so much and that is because of ICT is always being used in my lessons.”

Impact on learning

Teachers sometimes offered more everyday examples of this value and its ‘impact on students’ learning’. ET4 explained:

“Technology helps to refocus the students from one point to another very easily, making the lesson more attractive. For example, producing PowerPoint slides keeps the student’s attention, as well as smoothly turning their attention from one point to another.”

Another talking about presentations, RT4 argued that it:

“...helps to keep my students’ attention during the lessons. What I noticed during the exam time students could reflect better where I did presentations compared to the lessons which were conducted in the form of a lecture.”

One particular value of ICT was that teachers felt that it allowed variety in lessons and as KT2 explained, opportunities for making their lessons more interesting:

“Technology helps us address monotony style...It helps us to make our lessons more interesting. Simply just watching a video clip that show real life issues or reading an article could bring students together for discussion in ways that reading does not.”

Teachers KT5, ET5, and RT4 pointed out the importance of using the smartphones which were a part of students’ everyday use:

“During the lessons, students use their smartphones and I hear a lot from students that this piece of technology means a lot to them.”

Some teachers were encouraged to use ICT because it impacted on students’ learning, while some teachers were encouraged because of its *‘impact on teachers hared learning experience’*. Teachers stated that ICT allowed them to create a collaborative learning environment and a communicative atmosphere to negotiate with each other by giving online seminars. For example, KT3 had the opportunity to give online seminars to her counterparts.

“This year, my colleagues from other universities asked me to organize an online seminar on language teaching methods. I did this seminar in one of the well-equipped rooms. This special equipped room helps us to organize online seminars regularly. Last year, I had the chance to do series of seminars with Germany and China and regional institutions as well.”

KT1 added:

“We regularly organize seminars and online conferences twice a year. It was a good opportunity for all the teachers to meet to share ideas and their experiences in teaching. These conferences have been uploaded to YouTube.”

Some teachers believed that *‘ICT use motivated’* learning as it fascinated learners. KT4 stated that:

“In order to motivate students to learn Kazakh language, I used YouTube video materials showing my students how other nationalities across the world learn Kazakh. For example, I showed them a video clip about a Korean boy who learnt Kazakh in a short period of time. This video [was] showed purposefully. As a teacher who has two years of experience, I sometimes struggle to teach second language learners to interest them in learning. And these materials somehow would help me to motivate them.”

Beliefs about ICT

Another teacher, ET2, shared their *‘belief on ICT’*, saying that ICT is a good motivator:

“I have seen how students become excited when you use a new application or if they see your demonstrating new ICT skills in using technology. They always come to you after the lesson and express their excitement. As a tool, it is a good motivator.”

Some believed that ICT served a wider purpose in helping teach to ‘*reflect wider society*’ and others, and that it allowed a more modern approach to teaching. RT1 explained:

“Our society is fully mediated with technology which makes us teachers responsible to provide choices to students. If they want to learn with technology, we should use it and provide choices so that they can best benefit from it.”

One of the biggest benefits of technology as mentioned by ET2 was to reach audiences across the globe. Language learners not only have access to more resources due to technology, but also native speakers, thus saving language learners’ time and destroying restricted geographical boundaries.

“Technology is a very useful tool for time saving. For example, it helps us to access different learning resources. If you know how to access appropriate resources; it means that you are ahead of your time compared to others. Also, it helps us to reach more audiences for example, if offline I teach 20 people, online I can reach 500 or even more at the same time.”

According to KT6, technology had transformed teachers’ role from a traditional knowledge-provider into a technologically skillful facilitator.

“We need to understand being a language teacher requires lots of skills nowadays. You need to be technologically smart, knowledgeable. It is not the time of giving long period lectures as decades ago.”

KT2 explained that technology encouraged a more exploratory approach to learning:

“...if you give your students a case to explore, they can do research with the help of ICT and provide evidence that helps them to gain more knowledge and experience of problem solving.

On a personal level, the two deans were also both positive about technology and again mentioned its motivating value:

“I support the idea that technology motivates learners, but again we need to be able to combine both ways of teaching and do not fully rely on technology. Young people, they like technology, as they use them in everyday life. I support the LT use of technology in general. I use a lot audio [and] visual materials for second language learners. But I prepare my audio materials myself.”

HoDs were also positive about ICT, and the delivery of a new course on Smart technology was seen as a step to implement ICT in language teaching and learning. However, this could lead to the idea that ICT was to be discussed as a stand-alone subject rather than a tool to be used for language teaching and learning in general.

“We have a course in our faculty on Smart technology. This has been integrated to support the ICT use plan. For example, Smart technology for translation is taught differently and it means they use to learn how to use different tools in language teaching and learning. For this reason, last year, our university opened the lab or studio for synchronous translation. Currently we are at the stage of integrating this lab into our curriculum.”

KT added that ICT was a requirement in the curriculum.

“One of the main components is ICT, it is a requirement.”

ICT use encouragers and discouragers

Belief in the impact of ICT was a major encourager on teachers to use it, but there were several contextual conditions to consider. Here, we look at access, personal qualities, training, and the wider environment as encouragers and discouragers. Encouragers and discouragers are covered together as a single condition, for example Internet access, could be an encourager (if present) or discourager (if absent). Table 51: Encouragers of ICT use, Table 52: Discouragers of ICT use display the encourages and discouragers of ICT use as presented by the interviewees.

Table 51: Encouragers of ICT use

N	Sub themes		Kazakh teachers	Russian teachers	English teachers
1	Access		KT1, KT6, KT3	RT4	
2	Personal qualities (Willingness to use own initiative)		KT2		
3	Training	Training from outside	KT3, KT6, KT2, KT5	RT2	ET1, ET2
		Training from the department		RT2, RT3, RT4	ET3
		Online training	KT1, KT4		ET2
4	Wider environment	Support from IT services / department	KT1, KT2		
		Management	KT3	RT1, RT5	ET2, ET4
		Government backing	KT3, KT4, KT1		ET2

Table 52: Discouragers of ICT use

N	Sub themes		Kazakh teachers	Russian teachers	English teachers
1	Access	Classroom facilities	KT6	RT4	ET2
		ICT compensatory	KT1	RT2	
2	Training	Questioning CPD	KT6	RT5	
		Restricted conversation		RT3, RT4	ET5
3	Wider environment	Support from IT services / department	KT2		
		Management	KT3, KT6	RT2, RT4, RT5, RT4	
		Government backing	KT6, KT2	RT3	ET3

Access

The most important contextual issue in the use of ICT was ‘access’. ‘Access’ as a factor was talked about in both an encourager in the use of ICT, but also a key discourager. However, whenever teachers described access to ICT as a discourager, it was in fact the ‘lack of’ access as mentioned previously. For now, I will explain how teachers saw access as an encourager.

Some teachers taught in classrooms with an Interactive whiteboard and that encouraged them to use technology. Other teachers had access to laptops and projectors which made their use of ICT possible in the classroom. For example, teacher KT6 explained how teachers taught in classrooms with no computers and no fixed projectors, but they were provided with a portable projector and that all the teachers owned laptops which they could bring to the classroom:

“Each department has two portable projectors, which is easily accessible to everyone who wants to use them. It is not difficult to book it beforehand. Alternatively, if I go to teach in other departments, I can use their projector also; some classes across different departments have classes with fixed projectors.”

There was a Wi-Fi system within the university and Internet access was free to university students and teachers. KT3 felt that Internet access had increased the use of ICT:

“Nothing stops the teachers using ICT, they are all competent enough. Anyway, they use it at least for administrative purposes. But classroom conditions can be the reason to stop them using it (for teaching). However, with free Internet, young teachers like me [can] always scan different websites, in order to show to students how to search hundreds of topics. In everyday life, I use it more and more.”

Deans were often optimistic about the availability of resources – even if they wanted more, D2 mentioned some examples of ICT resources that were available to teachers:

“At the university, at the faculty we have projectors (two for every department are available), computers in teaching rooms, multimedia programmes, and a language lab for synchronous translation. This year, we opened the programme for synchronous translation which is a new area for us. Also, our university has a very good system ‘Univer’ where teachers as well as parents can track students’ achievement.”

D1 explained the process of procurement:

“Every year, we request different things to buy, for example computers, scanners, or photo cameras. Sometimes we request to repair some technologies which are out of service. Within all the department[s], we have a service called ‘directum’ through which we send our requests which goes through people who are in high positions when we get approval from them, especially from the one who is on the highest positions, then they will consider your orders at the supplier and accounting department.”

As mentioned earlier, ‘access’ was mentioned as a discourager of ICT use by many teachers.

However, the following results demonstrate that it is the lack of access, rather than access to ICT itself, that is the discourager, as many teachers seem to want to use ICT more but cannot be due to this lack of access.

When it came to access, most of the teachers complained about the lack of ICT facilities in teaching rooms, as well as in offices. Lack of access was the main reason for lack of ICT use, as KT6 put it:

“Conditions of the classrooms are awful, even in some classes there are not enough plugs, wall sockets.”

Lack of access to ICT covered the ‘absence of ICT resources’ like computers and projectors in the classrooms which meant there was a need to find compensatory strategies. Most teachers were willing to work around the lack of access, but this brought further responsibilities and was ultimately unsustainable. KT6 and RT2 explained that lack of access burdened teachers with additional responsibility and added that it was not realistic to expect teachers to bring the projector to every class.

“At our university, ICT level is very low, and it causes difficulties. If there is a fixed projector in every classroom, it will make our life easier but for now, we have two projectors for forty teachers. And every time when you use it, you are the one who is responsible to bring it back safe without any damage.”

A wider issue of access concerned access to reliable resources for teaching. In other words, teachers could compensate for lack of classroom access by pointing to online resources, but those resources were not reliable and some teachers, particularly Kazakh teachers, talked about the lack of access to appropriate material. Again, there were compensatory strategies. For example, KT1 explained how she accessed Russian websites. She had learnt by putting extra efforts into her planning by looking at Russian tests and using these as models:

“Websites for teaching Kazakh lack useful resources compared to [those for] Russian and English. For example, Russian tests [are] organized according to the levels of learners

considering their skills as well. So, I use Russian websites instead. And this all takes time, generating useful ones, sorting out the appropriate information, translating its content.”

Deans added that leaders of the university did not need to be IT experts but do need to have a vision and that the university should support teachers by providing them with ICT. Both wanted to develop further the use of technology but were dependent on getting the right resources, as D2 explained:

“In the last three years, changes in regard to ICT implementation [can be seen in] the course Smart technologies. But all teachers are obliged to use ICT in teaching. This year, the university has a plan to equip all the classes with technology. However, we are reliant on [the] MOE budget. This is just a start, now we need to calculate how many computers we need depending on the number of the classes.”

D1 saw it was the job of the university to supply teachers with ICT:

“At the university, there is a special department – we call them department of suppliers and accounting. This department decides what to buy, where to buy, when to buy including chalks, paper, IWB, everything. But each department can request from them to buy certain things.

AH stated that:

“We have Internet, computers, notebooks, two projectors, and a language lab. Also, different software packages that our university system provides. At the same time, as a member of different publishing companies like Inter-press [and the] British council, I gain lots of bonuses to access their online resources. So, I use them too in my teaching and, sometimes share with my colleagues at the department.

However, while KH noticed the availability of resources for teachers, some were out of date:

“We have these old computers at the department which waste your time while browsing. And these computers are only for admin purposes, not for teachers. Teachers can bring the projector to the classroom and show their material using their flashcard, they can use it in turns as we have two projectors accessible to 40 teachers and these poor conditions are the same from faculty to faculty.”

Personal qualities

We look at personal qualities as another contributor to the decision to use ICT. A first encourager was teachers' *'willingness to use'* their own initiative. For example, KT2 was driven to use it by internal factors:

“I use technology because of my students. Nobody encourages me to use it, not the administration or staff members. The main reason is I want my students to be competitive members of society.”

Another teacher was enthusiastic in using technology and was prepared to do more to learn more about it. KT5 explained that:

“I really do not know what prevents the use of technology. I think these might be the teachers who believe that the content of teaching is more important than the use of ICT. But I wonder how they teach without using it. In my opinion, there is nothing to stop using it if you are passionate to use, you will find the ways to use and you do not need to be encouraged.”

One of the Kazakh language teachers, KT4, had strong opinions regarding the teachers' responsibilities to make changes happen in HE and stated that:

“As a teacher, what I understand, if I want to improve my teaching, politicians have nothing to do with it. For example, if I want to improve the status of Kazakh language teaching, I have to start with me instead of blaming the government for that. I need to improve my teaching, work hard, and create new possibilities for Kazakh language learners.”

The same with the technology. If I want to be implemented the use of ICT, I need to be more innovative.”

Through these examples, teachers' agency, their willingness to commit, comes to light. They put in the effort to use technology because they believed it was worth doing.

Training

Training was another encourager. AH talked about the training provided by Orleu, an in-house training programme that worked across the university departments to support teaching development. However, teachers were not motivated to attend these training events.

“In terms of training, we do not have special training on ICT use. Training related to technology use is mostly provided by Orleu. The university training system mostly relates to syllabus design, seminars related to new education programme. We do training, seminars to schoolteachers during summertime. Our department teachers are not so interested to attend them because this does not give any scores in teachers' indicative plan.”

However, the HoDs were more positive about this training:

“As a head, I do support all my teachers to go to training. If there is any training from any organization, I always announce them among teachers. Orleu offers every available training course to our university. There is always training within the departments, some online some offline.”

Teachers were encouraged to give online seminars and attend or present at conferences which enabled them to develop their pedagogical and ICT skills. However, most teachers were interested in attending to their own CPD when it came to ICT, and they talked about the training provided by 'Orleu' (see glossary) in using ICT. These were funded training events to develop pedagogical skills, as well as ICT skills, but only for limited number of participants. For example, KT3 explained that she learnt a lot from this training:

“This summer, I attended training on ICT use funded by the government. Even if I am at my retirement age, I am still curious to learn and to improve my skills. At this two-week course I learnt how to edit videos, animated cartoons with subtitles. But now I am so excited to apply all the things that I have learnt in my teaching.

Another teacher, KT6, found this training also useful but not well suited for the resources in their institution:

“This summer I finished the course provided by Orleu. Most of the things that they taught were very useful such as editing videos, subtitling; however, some of the things I have learnt from my previous workplace and there was no use of them. For this reason, I do not think that sharing my knowledge has any use to others until we have all the technological resources.”

Teachers from all three departments found Orleu trainings very useful. However, ET4 added that events could accommodate only a limited number of participants.

“It is good that department provides trainings from Orleu, but not all the teachers have the chance to attend them. They have the capacity to allocate limited number of participants saying that ‘first come first served. For example, this year, they offered ten places so that each department had been given an opportunity to allocate two teachers.”

In general, teachers wanted to develop their teaching and also attend ‘*training provided by their department*’. For example, Russian department teachers improved their teaching skills by attending training and RT4 explained:

“The department provides training for teachers in order to improve the teaching content (curriculum), pedagogical skills. For example, last year, a guest from RUDN was invited to give us a seminar on contemporary Russian literature. And I also did an online course

which was organized by our department. It was a two-week training [course] on the use of cloud technologies; on completion I was certified.”

Some teachers found informal opportunities for learning by taking ‘*online training*’. For example, KT4 stated that:

“At the university, the training sessions are not available for everyone. For this reason, I try to learn online, sometimes watching videos on YouTube or on British council websites. On YouTube, I learnt how to make a better presentation; however, these online trainings cannot be compared with face-to-face ones.”

KT1 supported this and described the advantages of ‘*online courses*’:

“I do three to four training events online in a year. And I prefer online training for its time convenience.”

Overall, all teachers understood the importance of the training and they had positive intentions to attend them in the future too. KT5 stated that:

“I have never attended training on ICT, but I am really interested in attending it, especially trainings organized by Orleu.”

When teachers were questioned about ‘*training*’ in general, they talked about attending courses and had used their own initiative to improve their practice in using ICT. However, some of them felt that there was no need to, or at least no point in attending training for ICT use as they could not use the skills they gained because of lack of access. This led to low expectation on ICT use. From this point of view, the training did not have the effect that it could have had. For examples, RT5 felt that she was not expected to use ICT even after completion of the trainings.

“Attending trainings is only up to my interest. Within three years of my working experience, I could only attend one but not related to ICT. I am sure even if attend [one] on ICT use, nobody will expect me to use it or will expect me to share with my gained knowledge.”

KT6 complained about the irrelevance of the training, pointing out a tension between pedagogical practice and technical skills. She had attended training in the past in another university. In that university, they provided training together with technical skills in the context of pedagogical practice and she appreciated this because it enabled her to see how ICT could help her to become a better Kazakh teacher. In reflecting the training in this university, she felt that the pedagogical dimension was missed. Consequently, she felt that attending trainings was a matter of fulfilling the duties.

“When I was working in a private university, they provided training on ICT use and these events not only focused on ICT skills but also, revised the pedagogical practices. Here, nobody cares how you have been trained, even if I present a fake certificate, they will be happy to tick the boxes that I have done it.”

There were limits too on how far informal learning could compensate for gaps in training. Sharing learning experiences could be a source for professional development, but there were limits on how far this would work. In particular, while conversations did involve teaching and the use of ICT in teaching, they did not tend to cover experience of ICT use and ET5 stated that:

“When we gather with colleagues, we discuss the experiences of teaching as well as achievements of our learners. But I have never seen any of my colleagues sharing their experiences of ICT use.”

RT3 stated that their in-person conversations were around teaching approaches:

“Mostly we discuss about the teaching approaches, content of teaching material, but not about the use of ICT.”

When the IT specialist was questioned about teachers’ professional development, she explained that the support provided by IT services was technical, rather than about the issue of ICT in teaching. ITS offered CPD for all the stakeholders including administration staff, methodological bureau and teachers.

“We do training with all the staff members of the university if there is a new change in the system. Our aim is to train staff members how to work with system Univer, introducing its new function. But we do not do any training with the use of ICT in classroom teaching.”

When ITC was questioned about her own professional ICT training, she referred to training that was provided by IT companies:

“Mostly training with the use of ICT comes from companies like Microsoft. I once myself attended one of the trainings and had a certificate of attendance. I think these kinds of trainings are for IT programmers rather than subject teachers.”

The wider environment

When teachers were asked about the wider environment, they covered the level of support received from department managers, as well as students’ potential support in terms technology fixing, support from university authorities and their doubts about government backing.

The level of support received from the ‘IT department varied’. For example, KT1 explained she could text for support.

“At our university, we have an IT department to deal with any technical fault. The easiest way is to send a note through Outlook. Sometimes support comes instantly but I cannot say that we always receive immediate support.”

Another teacher felt that students were a potential support in the class as they were better acquainted with technology. For instance, KT2 stated:

“When I have problems with technology during the lessons, I can ask my students because I do not want to waste my time or sometimes, I fix it myself too.”

This was confirmed by the ICT services representative who commented that the service they provide was only related to the system Univer.

“If there is any issue or any problem in the system, we have the support to solve it. We also have IT programmer specialists to help with technology fault in the system.”

When discussions turned to the wider environment, teachers were asked about the support that they receive from ‘department managers. Department managers were largely found to be encouragers of ICT use. For example, RT1 mentioned about the evaluation of ICT use in the annual reviews.

“I think that [the] head of the department is interested in the use of ICT because it is a requirement in the annual report and managers request to report the use of ICT too.”

Another teacher also felt that teachers were encouraged by managers:

“Department managers encourage the use of ICT because there is a requirement and based on that we are expected to use technology. However, teachers were failing to meet their requirements because of the conditions and managers cannot do anything.”

ET4 also felt that department managers encouraged the use of ICT, but they had no power to change the level of resources because that depended on decisions of university authorities.

“Department managers always demand improvements in terms of ICT resources. For example, this year we started seeing this change, we have equipped classroom for synchronous translation. But we waited for five years.”

Most of the teachers were aware that even if department managers wanted to improve conditions, it was not in their power to do so. As a result, teachers tried their best to cope with the situation. Some teachers found ways of improving resources by making money in commercial activity which managers could use to buy equipment. KT3 explained:

“As I know university authorities support us to commercialize our seminars, conferences, publications. If this is the case, teachers should be flexible to make money by organizing such events then department can supply themselves with technologies. That’s how I equipped one of the classes for our department’s benefit. I taught international students from China to learn Kazakh language.”

Teachers felt there was an encouraging discourse around technology at university level and ET2 noted that:

“I think our university in general supports the use of ICT. We have a lab class with a big screen TV, computer class for synchronous translation. We would not have these changes if the university authority was not interested in supplying with ICT resources.”

When teachers were questioned about ‘Government backing’, the more experienced teachers tended to be aware of support for ICT compared to the Soviet period. KT3, who taught in the Soviet period, felt that ‘the government encouraged’ the use of ICT providing opportunities for going abroad and gaining experiences in the use of ICT. KT3, who had some working experience in China to deliver a course, stated that:

“We have an education programme until 2020 and one aspect is integration of ICT into education system. And I am sure as a national university, we will get their support based on the programme. Also, I want to add that I have experienced living in the Soviet time, the time we were under strict control. But now, we started experiencing new things, working and

attending training, conferences abroad. You are the example of that change. Things changing for the better and I am happy for all the changes happening now.”

Another teacher, ET2, also believed that the Government Education programme supported the integration of ICT stating that:

“Government supports the integration of ICT systematically. Implementation of technology started from school following different phases. As a national university, we also receive this support at present, for example, different departments across the university experiencing these changes.”

Another teacher, KT3, was encouraged, noting the limitless access to Internet resources provided by Government which improved the quality of teaching material.

“Technology opened limitless opportunities for teachers as well as students. For example, in Kazakhstan, we can access all kind of websites available online. There is no regulation or limitation to certain kind of resources as in China. When I was working there, I experienced it a lot. Our government gives us free access to all available resources so that students and teachers can benefit from it improving the content of teaching.”

KT1 also felt encouraged accessing online resources and noting the government support in creating KZ websites:

“At the university level, we have the departments to deal with technological supplies. However, at the Ministry level, creating KZ websites is great support for teachers. For example, these websites were created by Government grant and the number is growing. I am grateful to use them in my lessons.”

Finally, KT1 appreciated that the Ministry of Education had encouraged the use of ICT by organizing competition among teachers in the HE sector.

“Last year, I had the chance to participate in the competition for the best teacher award which was promoted by [the] Ministry of Education. The lesson was video recorded and sent to them and it has been a great stimulator for me to support the implementation of ICT in language teaching and learning.”

As seen from previous examples, in general, teachers were very receptive to adopt ICT in their classes and showed their willingness to acquire new skills. However, when they were questioned if the university, and particularly the head of the department, were committed to adopting ICT, the answers were varied. RT2 did not believe that the ‘head of the department’ was supportive, given that there was a shortage of equipment stating that:

“I cannot say either the dean nor the head of the department are supportive. Maybe they support others, but I have never experienced any of their support. We have two portable projectors for 40 teachers, anecdotic situation. There are classrooms with IWB, but they are not accessible to everyone.”

There was a general feeling that leaders were 'paying lip service' and not attending to the range of actions needed to be done to enable ICT to be used. In respect to the wider environment, one of the teachers mentioned the policy as written was supportive of ICT use but this was meaningless without the resources. RT4 stated:

“We have the policy that supports the use of ICT, but teachers do not need written encouragement, we need working policy that meets our demands. For example, if they want us to use technology in the classrooms at least we need computers with projectors. The projector is very fragile, it is not for carrying from one class to another.”

The idea of lip service was expressed when talking about the functionality of the machines they did have. For example, RT5 said that on one level there were rooms with computers, but some of those computers did not work:

“I can’t use computers regularly as we lack them in class, even the ones that [we] have do not function properly and I don’t understand why to keep them in the class. Maybe they want to show visitors that they have computers in the classroom, but they are creating an imaginary situation.”

RT4 expressed the difficulties that she experienced in her daily teaching routine and what support they need from HoD.

“We just need to have normal teaching conditions including ICT. I think I am not talking about something that is difficult to organise. You have witnessed the classes with 28 students sitting in one small classroom. You have experienced the situation when I was mistakenly allocated to a different classroom, losing ten minutes of my lesson.”

When teachers were questioned about support from their head of department, they mentioned the process of annual review in which they were expected to meet the targets put forward by the university. This seemed very important because teachers were evaluated every year. Evaluation of teachers’ teaching practice could take many forms: teachers’ interaction with students, pedagogy, teaching approach, even perhaps ICT use. An important formal focus for classroom evaluation was the use of ICT, however, teachers tended to perform to expectations, so this was not a good indicator of how they used ICT the rest of the year. In this instance, RT4 provides insights how well she came prepared for the lesson evaluation.

“Evaluation of teaching takes place every year and [the] head of department is also interested in this. But it is a planned event and one of the criteria is the use of ICT. In other words, how well I could demonstrate the use of ICT in achieving the objectives of my lesson. However, as a rule I come well prepared for this kind of lesson fully armed with technology.”

Another form of evaluation was student feedback which happened twice a year. RT4 did not believe that evaluation improved her use of ICT stating that:

“At the university, teachers, as well as students, evaluate teachers’ teaching practice anonymously, taking the survey twice a year. However, as I remember my ICT use does not meet their criteria, it is always scores low in my case. And I do not believe that this evaluation process will change anything unless the conditions improve.”

In view of these comments, it is interesting to see the evaluation of teachers from the HoD’s perspective. As a head, AH explained how she had to follow the university guidance and report back even when there were gaps and short comings with the proformas:

“All we have to do is to follow the indicative plan for evaluation. I do not know who made this, where does it come from? But I do not agree most of the indicatives. However, I don’t have my voice to change anything, nobody takes our complains into considerations. We just have to follow the rules without asking any questions. My role as head to make the things happen at the department, overcoming all the difficulties making the impossible things possible.”

In discussing evaluation, the deans spoke about peer reviews of lessons:

“All the teachers can use ICT; they use new methods of teaching that always comes with the use of technology. In every term, all the teachers organize observation lessons, and every teacher is obliged to see at least five different teachers. After these lessons, there is a discussion where evaluation takes place but at the same time, they learn from each other. Afterwards they discuss it with their department members.”

In terms of evaluation of technology, D1 thought that what was observed depended on teachers’ interest, but he believed that technology use is not so important in language teaching and learning.

“It depends on their aim. As I said, we are [a] philology department and students come here to learn languages, students who come to learn Kazakh prefer to communicate in an

authentic environment and to practice their language. They always come with their laptops, but teachers also use their own technologies during the lessons for audio purposes.”

When the teachers were questioned about ‘government backing’, a few teachers said they were unaware of this and some felt that there was no any support in relation to creating better working conditions for teachers. For example, KT6 was not enthusiastic about support from the government.

“Who knows? Maybe they want to make changes supporting ICT integration. As I know, there is a policy which is promoted by [the] Ministry. And our country has an aim to be in the list of 30 or 50 developed countries. I think if they want to be in that list, the government should create better working conditions. But our government has everything well written on the paper, not in practice.”

KT2 added:

“I don’t think that there is a support; if there is any, why we should be carrying our laptops to every lesson.”

Another teacher, ET3, believed the MOE needed a ‘proper plan’ for the integration of ICT:

“I don’t think that there is any support from the government. If the ministry provided backing, we would not be experiencing lack of technologies. To tell the truth, even the technologies, the equipped classes have been sponsored by the graduates of the university.”

RT3 was not optimistic about ‘government backing’ stating that:

“Nobody cares about the implementation of ICT. I don’t think there is a policy. It is only teachers’ personal interest.”

When the deans were questioned about ‘government backing’, D1 was not sure how to answer the question but was aware of uneven provision.

“I cannot answer to this question, as I said we have separate department which deals with supplying technologies to the university. It is a very big department, and it is their responsibility to equip with technology. I think mostly our university is interested to support the applied science department with ICT rather than the Humanities departments. For example, we have at the medical science faculty all the latest technologies, computer science department, they have all necessary technologies compared to us.”

As HoD, AH was also aware of unevenness of provision:

“I am not the head of big organization; the MoE is a funding body. As FB, they have their own interests. They have the power and money to supply us with everything and the technology is not so expensive, it is affordable if they want to support us. But I have so many issues to deal with at department level and I really do not want to raise the issues related to the MoE. We have two IWBs for the whole faculty which are out of service and that is their support.”

When teachers were questioned about ‘government backing’, they were sometimes frustrated:

“Because of not having any support, we do not have the technology. I made a request for funding to language teaching labs. The SWOT analysis was made but unfortunately, we are still waiting from the MoE’s approval.”

From the interview, as AH stated, the university supports the departments through the maintenance department, so this takes a very long time to wait for the approval of departments’ requests.

“We do request the technology through [the] maintenance department, but the problem is the university is big and there are many steps until you get approval, the bureaucracy is beyond expectations. For example, I made a request to buy books from Cambridge University Press

and we are still waiting for them for about six months. So, as you see, there is a support at the university but it takes long time to wait.”

When KH was questioned about university support, she referenced to the Involvement Fund within the university where teachers have to contribute and continued saying that:

“At the university, we have university [the] Involvement fund... the budget of the fund is two million tenges. Teachers also have to make a contribution to this fund, but we have no idea how and where this money spent. If the university would have prioritized the importance of the language learning, we would be given support.”

Summary of interview results

Deans, HoDs and IT specialist:

- Deans and HoDs were well-qualified teachers and had now responsibility for departments and the wider university.
- IT specialist had a substantive working experience and her role mainly dealt with providing support with the university platform.
- In terms of current challenges, university leaders were concerned with much more than technology, for example policy, recruitment, research publication and imposed changes because of the BP.
- Curriculum had adapted and become more flexible and responsive.

About ICT:

- Leaders were positive about the impact of ICT on motivation but focused attention on particular subject teaching.
- Leaders seemed satisfied with their resources but were aware of unevenness in provision.
- Training to support ICT was provided by other organisations. Training provided by university only covered general curriculum development. Training provided by IT

services was at the technical level, ICT was seen as one of the criteria for teacher evaluation, but deans were not involved in the reviewing process of the evaluation.

- HoDs felt powerless to deal with department level issues without university or the Ministry of Education's support.

This section also looked at teachers and their teaching, use of ICT in and out of the classroom and encouragers and discouragers for ICT use. It was found that:

Teachers and teaching:

- Most teachers were well-qualified and motivated. Kazakh and Russian teachers often had gained their qualification from the case study university but English teachers from different universities. Teachers' background (age, experience and gender) did not have a substantial influence on ICT use which is in line with survey findings.
- Teachers felt both satisfaction and faced constraints. Job satisfaction covered a balanced workload and working relationships with young people. On the other hand, they experienced unsatisfactory resources and constrained classrooms. Kazakh teachers experienced particular limitations on accessing educational materials. Lack of communication, top-down leadership, and salary were perceived as dissatisfiers.
- Curriculum development was viewed both positively and negatively. Change felt imposed but it was needed for improvement. The curriculum was viewed as controlled, but teachers had experienced a degree of freedom.
- Pedagogy covered practical strategies rather than learning theory as such. Teachers wanted to be creative and to provide variety. Assessment was seen as an important element to help students progress. Pedagogy had to adapt to context.

About ICT use:

- Teachers ICT use occurred during and outside the lesson. Key reasons for ICT covered projection, creative applications and variety. Teachers could explain the rationale behind

their use. Outside of the lesson ICT could play a role in planning lessons, communication and in offering enhancement of previous classroom activity.

- Teachers were positive about the use of ICT, feeling that it helped students' motivation and learning. Some felt it was important to use ICT in a modern teaching setting.
- Attitudes were important drivers of ICT use, but contextual conditions covered access, personal qualities, training, leadership and the wider environment. Each of these were viewed as both encouraging and discouraging. Access was a key issue and lack of technology was a serious constraint on use even though teachers tried to compensate for lack of access.
- Teachers seemed to have potential support from managers of the department and backing from government as compared to Soviet times. However, support for ICT could be just lip service.

Chapter 5: Discussion

Introduction

This chapter compares and contrasts the different data and explores the findings in the light of the reviewed literature. The main research question of the study, ‘Why do language teachers use/do not use ICT in teaching and learning in HE in Kazakhstan’, is explored later in the section. In the first part of the chapter, we answer the sub-questions:

RQ1. To what extent do language teachers (and groups of language teachers) use ICT in teaching at the target university in Kazakhstan?

RQ2. What do they see as the benefit of using ICT and what helps them to use it?

RQ3. What helped and what constrained the use of ICT?

RQ4. What are the consequences of using ICT?

RQ1. To what extent do language teachers (and groups of language teachers) use ICT in teaching at the target university in Kazakhstan?

Table 53: Summary of results for research question 1

Research Question	Survey	Interviews	Observation	Literature	Consistent or contrasting
To what extent do language teachers (and groups of language teachers) use ICT in teaching at the target university in	The most frequent use of ICT was PowerPoint presentations; use of Internet for lesson preparation; and use of smartphone	ICT for lesson preparation was consistently mentioned. The lesson included regular use of PowerPoint	Teachers taught in similar ways. Power Point Presentations were not possible. Teachers’ own personal	Literature points to strong interest in technology for teaching and learning ICT fits well into the language	Sources of data are consistent and shows limited use of ICT. Key uses were preparation, presentation (with or

Kazakhstan?	<p>communication application such as email and social media to communicate with students.</p> <p>In class, the most frequent resources were CDs that came with the textbook and IWB.</p> <p>Use was differentiated by age group and teaching specialism. (English teachers used ICT more) and teaching experience.</p>	<p>Presentation and multimedia.</p> <p>ICT that was used outside of the lesson was for lesson preparation, compensation of time, and staying connected with students.</p>	<p>computer was used for some classes.</p> <p>In class, use of students` own laptops and phones encouraged.</p> <p>‘Google’ search engines were used for vocabulary and information searching.</p> <p>Teachers would suggest and encourage students to use other ICT-based learning platforms outside of class. platform out of class.</p>	<p>teaching curriculum.</p> <p>Literature shows varied use both in and out of classrooms.</p> <p>The extent of take-up is not clear.</p>	<p>without IWB) and after-lesson access to resources.</p> <p>Literature shows the limits on ICT use.</p>
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Overall, teachers in this current study did make use of ICT in their teaching and learning. This use was largely for lesson preparation, presentation in classrooms (where possible), use of recorded audio or video, out of lesson communication through phones and email and direction to the learning platform. In summary, teachers tended to use technology regularly for

presentations, accessing materials and staying connected with students and they encouraged students use in the class and after class.

This overall picture emerges from the survey, in which we found that ICT was widely used for presenting work using PowerPoint presentations, and that most teachers used the Internet to prepare resources and to access online materials (see p. 123). After the lessons, ICT was used widely for communicating with students (see p. 123).

In the interviews, teachers explained that ICT was used for projection and for creative variety including. The use of projection depended on access because it had to be loaned out in many cases. Teachers were creative in using ICT in the classroom beyond presentations for example by using programmes such as Video script and those that creates quizzes, eBooks and Instagram for different pedagogical purposes. Email or WhatsApp was used to provide support for students leading up to exams. Outside the lesson, ICT was mainly used for lesson preparation, staying connected with students and as a compensation for time constraints. Teachers used resources available on the Internet to prepare lesson materials, as well as to search for topics and lesson ideas. Some teachers used ICT to compensate time constraints in the class and encouraged students` self-learning.

Observation data showed that teachers wanted to use ICT and encouraged students to use smartphones in and outside the lesson. For example, in the observation data, teachers used iPads and laptops to play video clips, and students were allowed to use smartphones to search for words from an online dictionary and to explore different websites to compare and contrast. However, there was not any evidence of use of Power Point presentation in the lessons. The reason for not using projectors was explained in later interviews as due to the burden of responsibility to bring projectors into the classroom.

Interview and survey data were, in general, consistent. While the observations were not entirely consistent as they showed no use of projection, the reasons for this were explained. Altogether,

the data is complementary in that the survey gives a general picture and the interviews a more in depth one. The observations provide a credibility check for teachers' self-report.

There is not a straightforward relationship between these findings and the literature. The literature shows a wide range of ICT use in language teaching and learning. In several studies, ICT was used for innovative purposes. Baltova (1999), Bianchi and Clobattoni (2008) as well as Buscagli, Williams and Thorne (2009) used video for subtitling. Buscaglia and Holman (1980) showed evidence for the use of phones to record and play back to provide feedback. Pond (1963) showed how projectors could be used to present material, highlight, and underline features to support teachers' creativity. Roger and Midley (1988), Hanson and Smith (2003) and Zhao (2006) raised the importance of accessing authentic material to understand the contextual culture. Web 2.0 technologies enabled interaction in or outside the classroom (Hanson-Smith, 2003; Kern, Ware and Warschawer, 2008). In terms of media, video could be used under different conditions (e.g., Heyes, 1968; Orndoff, 1987; Herron et al., 1998). The Internet was considered to be a space of creativity and an innovative work environment. In comparison, teachers in this study were limited in their use of technology. They fell short of using ICT to its full potential but whether this set them out as different from other teachers is unlikely. Other studies have shown a similar picture (e.g., Gamlo 2014) and everyday practice in most contexts will not measure up to innovative field trails reported in the literature which involve only a few teachers. In this sense, the case study is a characteristic study and is probably representative of other national universities. However, private universities have better facilities and perhaps able to make more use of ICT as would some institutions in other countries. However, there was some creative use of ICT. For example, in the class to enhance reading comprehension skills, one of the Russian teachers talked about the use of eBooks. Instagram was also used to share experiences in teaching literature. Another example was that a teacher took students to the theatre and told them to record the different language used to gain exposure to authentic language.

Breaking down the use of ICT

Use of ICT was broken down in the survey and it was found that teachers of English tended to make more use of ICT. A reason for this was perhaps that English teachers needed to use ICT to access authentic resources and there were more teaching resources available online for English teachers. In comparison, the Russian and Kazakh language was naturally used in everyday life and so there is no need for using ICT to access authentic language. In the interviews, English teachers talked about how different resources could help achieve different learning objectives and seemed more interested in using ICT during the lesson and spoke about its use. It might be that English were younger and newer to teaching used ICT more because they had greater everyday experience of ICT and it felt more natural to use it. This did not mean that older teachers could not use ICT frequently too (see p. 144)

In the survey, I broke down different types of users of ICT (see pages 109-115) and higher, medium and lower users were identified. 'Pen portraits' of each are presented below.

Lower users

These teachers showed less competence and confidence. They considered themselves as reluctant users and found it challenging to use ICT in teaching and learning. They might be less interested, less motivated and saw ICT as rather disruptive. They were not sure whether they were expected to use ICT or not over (see p. 106 and interviews (see p. 155) and decided against doing so. Low ICT users were mostly unaware of ICT policies. However, these teachers were able to use ICT for their own lesson preparation and when use was expected and supported (see p. 156).

Medium users

Medium level users of ICT were teachers who had reasonably good ICT skills and who considered themselves fairly confident, as shown in the survey. These teachers might have a pedagogical understanding as to how ICT could be in line with lesson objectives. They would

use technology for lesson preparation and for communication with students and inside the lesson if the technology (for example IWB and CDs) was accessible. They use ICT to support the everyday work of teaching and learning and the administration that goes alongside such work. If there was a chance to attend training courses, then they might take it. However, they were not proactively seeking to extend the use of technology in innovative ways (see p. 153-154). Teachers at this level were more realistic about their ICT use. It was found in the interview data that if the curriculum requires the use of ICT, they might feel more comfortable using them. If there is any guidance from the authority to use ICT, they can follow this, but they might not be so enthusiastic to promote its use. High level ICT users were confident in their skills as can be seen in the survey data teachers' as confident skills were more likely to be high users (see p. 111) and were often looking for more creative, innovative ways of ICT use in language teaching and learning. They demonstrated regular use of ICT for preparation, for projection and communication. They also showed awareness of the value of ICT use for students (see p. 106).

High users

High users were enthusiastic about using ICT in teaching. They sought to overcome issues of time, access, and support or asked for support from university leaders as seen in the interview data (see p 155). They seek training which focused on practice of ICT skills and might look for other ways of professional ICT development, for example online programmes or those that are offered by other local institutions. As shown in the survey, teachers who attended ICT training courses were more likely to be high ICT users (see p. 112).

Most high ICT users were teachers who were familiar with the requirements of education policy and of imposed changes from the Ministry of Education. They were receptive towards a more integrated ICT curriculum, perhaps on one which could change the nature of language teaching and learning by, for example, reaching people in target language communities.

RQ2. What do language teachers see as the benefit of using ICT?

Table 54: Summary of results for research question 2

Research Question	Survey	Interviews	Observation	Literature	Consistent or contrasting
What do language teachers see as the benefit of using ICT?	<p>The majority of participants were positive towards the use of ICT.</p> <p>Teachers wanted to use ICT more in their teaching.</p> <p>Most believed that ICT enabled students to be more engaged.</p> <p>Only a very few thought ICT distracted students.</p>	<p>Teachers were positive about the use of ICT.</p> <p>They believed that ICT could impact on learning and shared collaboration between teachers and learners.</p> <p>Students were positive about ICT.</p> <p>ICT provided variety and helped teachers as well as students' motivation and learning.</p> <p>Some felt it was important to use ICT in a modern teaching setting.</p>	<p>Teachers were enthusiastic and tried to use technologies despite lack of ICT.</p> <p>Teachers owned their own laptops and encouraged students to use digital tools during and outside the lessons.</p>	<p>Literature shows the importance of ICT to access learning resources, learner centeredness and motivation.</p> <p>Teachers' beliefs fit with the idea of supporting individual learning, and up-to-date teaching material to engage students.</p> <p>Literature also points to strong interests in technological novelty that facilitates enjoyment in language teaching and learning.</p>	<p>Different sets of data are in line with the literature.</p> <p>All the data showed that the teachers strongly believed in ICT and encouraged its use.</p> <p>Teachers mainly believed in benefits of access, impact on learning and motivation.</p> <p>ICT was not found to be a catalyst for change.</p>

Overall, the different sets of data findings suggest that majority of teachers perceived ICT as beneficial because it helped with students` engagement and had an impact on learning and motivation. It also allowed access to multimedia materials and helped in the organisation of classroom language teaching and learning. All the sets of data showed that teachers had positive attitudes. This conclusion was arrived at by looking at the survey data which showed that teachers want to use ICT more in their teaching. In general, teachers had positive views towards ICT use as they found ICT encouraged more student engagement in teaching and was more interactive (see p. 106). In addition, these teachers viewed ICT as not disruptive. Teachers shared their beliefs that ICT encouraged teacher collaboration, allowing the sharing of learning experiences creating opportunities to online conferences and seminars (see p. 148). Data showed that teachers believed ICT was a good motivator when it was used as students were excited to see its use (see p. 148). Interestingly, teachers believed that ICT has transformed teachers` roles and had encouraged a more exploratory approach to teaching and learning (see p. 149 and see p. 146).

In the interview data, teachers found ICT was beneficial for students` learning experiences and made learning easier (see p. 127). The majority of teachers agreed that ICT was helpful for them when preparing teaching resources. It also helped them to access people across the globe (see p. 148). In addition, the importance of ICT in improving teaching content was also reported and helped keep them up-to-date. Some teachers, especially Kazakh language teachers, who experienced the lack of resources found ICT to be compensatory (see p. 152) and a tool to increase students` interest to learn Kazakh (see p. 148). Teachers believed that ICT helped them to organize lessons better and to make lessons run more smoothly and allowed the inclusion of extra activities (see p. 141).

Observation data showed how teachers tried to take some of the benefits of using ICT into the classroom. Some of the teachers used ICT to support the class discussion among students

by watching a video clip from a laptop. Teachers also supported the use of students' smartphones and laptops during the lesson. Almost all the students owned smart phones and had access to Internet to search for relevant information in the classroom (see p. 120).

Overall, the sources of data were quite consistent such that the use of ICT had value. This was in line with the literature. For example, audio-visual tools were deemed very useful in language teaching and learning (Svensson et al., 1985; Hanley et al., 1995; Rubin, 1998). Later, Hueber (1965) and Dakin (1973) pointed out the benefits of LL for individual learning. Keller (1987) highlighted the benefits of electronic dictionaries. Much of the more recent literature shows the importance of access to authentic material supported by technology. Becta (2010) suggested a list of authentic language resources carefully chosen for targeted language community. Masthoff and Pemberton (2004) reported the benefits of up-to-date authentic TV materials for adult language learners. Others have stressed the benefits of multimedia (Hanson-Smith, 2003). Additionally, Stepp Greany (2002) has reported the benefits of ICT for searching materials that widen cultural understanding. Herron et al. (2000) found that accessing culturally rich video materials improved the intercultural understanding of French learners. In relation to early studies in the literature, access to authentic resources was found to be motivating and had pedagogical impacts (Svensson et al., 1985; Lutcavage, 1990; Rubin, 1998).

Other literature has shown the link between technology and learning centeredness (e.g., Warschauer, 1996); Abasalom and Paid Amrden, 2004). Tella (1992), in an ethnographic study, found that students enjoyed working with computer-mediated communication as teaching became more learner-centered. However, teachers in my study supported the idea of learner-centeredness with observations of lessons showing a structure in which lessons have three parts. Technology may have facilitated a more relaxed style of teaching, but pedagogy was not explicitly learner centered.

Motivation is a key attraction for technology use. This was strongly confirmed in the literature. Almost all of the studies suggested that ICT motivated students learning. Golonka et al. (2014), as discussed earlier, saw students were motivated because of interaction with native speakers. The novelty of technology in its introduction was seen as motivating (Clarke, 1918). Later, similar findings were reported in other findings (Buscaglia and Holman, 1980; Twarog and Pereszlenyi-pinter, 1988a; Twarog and Pereszlenyi-pinter, 1988b).

RQ3. What helped and what constrained the use of ICT?

Encouragers and discouragers for ICT use are covered in three sections which include: access, personal characteristics, and the wider environment. These conditions acted as both encouragers and discouragers and will be dealt with as such. For example, access to ICT was viewed as a discourager when it is absent and encourager when it is provided.

Table 55: Summary of results for research question 3

Research Question	Survey	Interviews	Observation	Literature	Consistent or contrasting
What helped and what constrained the use of ICT?	Access as an encourager: Teachers and students had access to their own laptops and to the Internet in offices and classrooms; phone and email was also available and used. Access as a	Encourager: Teachers had access to portable projectors which enabled use of ICT; easy access to Internet impacted on ICT use; training was also an encourager. Teachers also had access to ICT support; access to online resources; Discourager:	Encourager : Internet access was confirmed. the use of portable projectors was not confirmed. teachers' access to their own laptops was confirmed. Students had access to	Literature points the value of access to resources, ICT, authentic material, and training. Literature also shows that access covers both tools and skills;	Sources of data are consistent with access as the main discourager of ICT use. Literature shows that access is not the only issue.

	discourager: The majority of teachers had no access to computers in teaching rooms; Russian teachers had less access to ICT.	Lack of access to ICT was found to be a major discourager where the majority of teachers raised the issue of access to computers in class or in offices. Compensatory strategies were needed, Training courses only accommodated limited number of teachers; IT services help limited to technical support.	smart phones. Discourager: Classes were not equipped with computers or projectors; None of the teachers had used portable projectors. Devices which were used in the lessons belonged to teachers and students.	Addresses limitation of training; Debates around access still remained.	
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Access as an encourager

Survey data showed that almost all of the teachers owned their own laptops and had access to the Internet in the offices and classrooms. Also, it suggested ICT was being used to access or to present information. In addition, a large number of respondents used phone and e-mail to interact with their students (see p. 104). It is noticeable that teachers were willing to recommend their students to use online resources. However, in the interview data, access to ICT was viewed as an encourager by a few teachers. Even though teachers taught in the classrooms with no projectors, having access to portable projectors enabled their use of ICT connecting it to their own computer (see p. 156). Also, teachers felt that easy access to Internet had impacted their increased use in language classes as well as in everyday life (see p. 156). Deans explained the process of ICT equipment procurement which saw the available means of ICT resources at a sustainable level.

In the interview data, leaders talked about the training as an encourager which was provided by other organisations (see p.160). In addition, across the university, there was training to support teaching development. Most of the teachers found the training courses that were provided by other organisations useful in supporting the use of ICT (see p. 161)

In the observation data, the accessibility of the Internet was confirmed. In the classroom, teachers, as well as students, searched for information using the Internet. However, use of the portable projectors was not confirmed. In general, findings from all sets of data showed that teachers could access to their laptops and the free Internet for their daily administrative routine in class and out.

Access as a discourager

Survey data showed that the majority of teachers had no access to computers in teaching rooms (see p. 107). However, reflecting on the findings, teachers report that they do in fact have access to computers in offices or in class, as they report to bring their own computers (see p. 107). Though accessibility of computers in teaching rooms was not so high (see p 107). According to the survey data, Russian teachers had less access to ICT. The least used hardware was the IWB, which was not accessible in the classroom as seen in the observations. As a consequence of limitations to access, teachers experienced the burden of responsibility and had compensatory strategies – this was shown in the observation data. In particular, Kazakh teachers mentioned the issue of online resources and shared their compensatory strategies such as using templates from Russian websites (see p. 158).

Most of the teachers' access to training courses was found to be problematic as it accommodated only a limited number of teachers. IT services did not have training courses to develop ICT skills and these services were also limited with technical support (see p. 163). Training provided by the department did not focus on ICT skills and instead on curriculum development (see p. 161). In addition, teachers were not interested in attending any training

courses to use to learn ICT and access was seen as a barrier. In the survey data, it was found that most had not attended short or long ICT training courses (see p. 102).

The issue of access to ICT resources was confirmed by observation data. All of the observed classes were not equipped with computers or projectors. None of the teachers had used portable projectors. During the lessons, use of the Internet was noted in only four classrooms. Observation data also showed that devices such as laptops and Smart phones which were used in the lessons belonged to teachers and students. Even the computers that have been observed in the offices were not used due to their poor conditions as noted by the head of the department (see p. 159).

As discussed in the earlier chapters, access was a high priority; in fact, it has been planned by MoES to provide higher education institutions with 100% access to Internet in an effort to promote technology modernization. The values of access of resources have been presented by UNESCO (2019). Kripanout (2007) in the same vein valued the accessibility of resources to academics such that it improves work productivity. Many years later, Zhao (2003) stated accessibility of teaching materials became efficient with technology access.

However, issues of access remained because of resource costs and ongoing costs of maintenance, support and upgrading (Gamlo, 2014). Ertmer (1999) described access as one of the extrinsic barriers. Access to resources and training was classified as institutional-level barriers (Becta 2004). In addition, some studies found that the limitations of training impede on teachers' ICT use (Albirini, 2006; Balanskat et al., 2006; Özden, 2007). Although, the issue of access to ICT has been viewed differently in different contexts. For example, Ertmer (1999) argued that in high access locations, teacher beliefs had become the primary constraint, while Cuban (2001) saw the curriculum as a major constraint and Farjon et al. (2019) argued that accessibility of ICT did not guarantee its successful implementation.

Personal qualities as an encourager and discourager

Table 56: Personal qualities as an encourager and discourager

Research Question	Survey	Interviews	Observation	Literature	Consistent or contrasting
RQ3. What helped and what constrained the use of ICT?	<p>Encouragers: Teachers with reasonable skills felt confident to use ICT; Teachers valued the use of ICT for students; Younger teachers were more likely to use ICT. Discouragers: Lack of confidence and competence to use ICT; uncertainty about its benefits; Older teachers less likely to use ICT.</p>	<p>Encouragers: Teachers' willingness contributed to their use of ICT. Teachers' commitment to teaching contributed to their readiness to use ICT. Discouragers: Teachers who were concerned about their pedagogical practice and technological skills; A number of teachers felt that there was no use in ICT.</p>	<p>Encouragers: Teachers showed confidence and enthusiasm to use ICT and promoted the LMS (Learning Management System) 'Intranet' and signposted materials. Discourager:</p>	<p>Literature points to teachers' confidence and confidence as influential. It also shows that motivation and lack of confidence was a barrier.</p>	<p>Sources of data are consistent, belief in ICT, confidence to use ICT and motivation to develop as teachers were important. Literature shows that confidence and competence is not enough as there are external barriers.</p>

Personal qualities as an encourager

Teachers' personal qualities are very important to consider as their views in relation to training, access, and support received might impact on their ICT use. In the survey data,

teachers who had reasonable skills, as well as teachers who felt confident to use ICT, were encouraged to use ICT more (see p. 112). These teachers were aware about the value of ICT for students (see p. 106). As shown in the interview data, teachers' willingness to use ICT contributed to their decision to use it. For example, teachers who were passionate and driven by internal motivation tended to use ICT without needing encouragement (see p. 160). Several teachers' commitment to teaching contributed to their belief that attending training was worth doing even though there was no recognition as confirmed by HoDs (see p. 160).

Personal qualities as a discourager

As the survey data showed, the lack of teachers' confidence and competence to use ICT was seen as a discourager. These teachers found that using ICT was challenging in their classrooms (see p. 112). The teachers who were less interested in ICT saw it as rather disruptive, which was reinforced when they were uncertain about its benefits (see p. 106). Also, teachers who were less interested to use ICT considered themselves reluctant (see p. 112). As found in the interview data, teachers were concerned about pedagogical practice not just technological skills (see p. 162). A number of teachers felt that there was no use in improving technological skills (see p. 162).

The factors that influenced the use of ICT in teaching and learning have been discussed by several researchers. In relation to literature, Mumtaz (2000), Bingimlas (2009) and Cubukcuoglu (2013) found that teachers' confidence was influential on practice. Picatose et al. (2018) addressed the need to use ICT in teaching in order to support students' confidence. Henderson (2014) and Jamieson-Proctor et al. (2016) in their findings reported on unsuccessful integration of ICT when teachers lacked confidence. Hossain et al. (2016) saw teachers' lack of understanding and motivation as a barrier. Several researchers also have found the lack of confidence as an influential factor to ICT use (Bax, 2003; Alshmrany and S. Wilkinson, 2014; Gamlo, 2014; Henderson, 2014). This lack of confidence was classified as a

teacher-level barrier (individual) by Becta (2004). In the context of Russia, Tokareva et al. (2019) found that teachers' ICT competence caused dissatisfaction among university students. However, some studies argued that teachers with confidence and competence could not make good use of ICT because of external barriers. (Al-Alwani, 2005; Sicilia, 2018).

In the literature, much is made of the distinction between digital natives and digital immigrants (Prensky, 2001). It is assumed that young people are natural users of technology and many do use technology a lot. It is easy to accept that education has not kept up with the changing practices of young people. However, it is important not to confuse young people's facility with technology with an understanding of content, or to assume that older people cannot learn how to use technology and will not be interested in using it. In my study, age was found to be a factor in that young, less-experienced teachers tended to use ICT more (see p. 111). However, this was not a simple relationship as clearly some older teachers were enthusiastic about ICT and some younger teachers were not. Moreover, there are wider generational shifts taking place in Kazakh society which affected teachers' decision-making and had little to do with technology itself.

Wider environment as a discourager

Table 57: Wider environment as a discourager

Research Question	Survey	Interviews	Observation	Literature	Consistent or contrasting
What helped and what constrained the use of ICT?	Government backing seen as neither an encourager or a discourager.	Encouragers: Support received from leaders; Support from IT services; Support received from students; Use of ICT as a criterion in teacher evaluation; Awareness of reform	Encouragers: Curriculum changes to include smart technology lessons. Discouragers: Awareness of insufficient	Resources and training seen as extrinsic barriers. Literature shows importance of curriculum and joint policies.	Sources of data are consistent, but little in the survey data and interviews and literature highlights the importance of the wider

		<p>in KZ society; ICT used and discussed in society in general; MoES support to develop websites; MoES encouragement in the use of ICT; Training courses within and outside the university</p> <p>Discouragers: Shortage of support from leaders, Lip service and lack of resources, Uneven provision and training.</p>	investment in ICT.	A discourse exists around creativity and curriculum reform with ICT.	<p>discourse.</p> <p>Overall, the wider environment matters in relation to support from leaders, students, teachers, and MoES.</p>
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Wider environment as an encourager

The overall impression from the sets of data is that the wider environment matters as it creates the culture and practices which allow ICT to be used. The sources of data were consistent but there was little on the wider environment in the survey data and was only implicit in the observations. Rather, the interviews were the main source of data.

In the interviews, encouragers were mostly related to support received from leaders, for example, teachers felt encouraged to use ICT because of evaluation requirements, rewards received from MoES, and trainings but not in terms of supporting them with resources. The majority of the teachers agreed that department managers encouraged them to use ICT as it is one of the criteria in teacher evaluation. One of the teachers mentioned about the support received from IT services explaining it was easy to receive support by sending a note via Outlook (see p. 163). One of the teachers mentioned the support received from students as

they seemed to be more skilled with technology (see p. 164) and generally encouraged teacher use.

Experienced teachers were aware of changes in the wider social and political culture and found the atmosphere more tolerant of innovation (see p. 166). A few teachers discussed the MoES' support to develop websites, particularly in Kazakh language. One of the teachers talked about the reward received from the MoES which encouraged the use of ICT. A few teachers felt that they were allowed to attend training courses based on their interests within and outside the university. However, they did not receive support from leaders to attend training courses systematically; this was confirmed by deans. All were aware of their everyday use of technology and its role in society; one had read popular articles about technology use and the future of universities with ICT.

However, the wider environment was also a discourager and led to the shortage of support in respect to resources, such as ICT training courses as described earlier. Teachers did not see a serious and joint commitment to developing and extending the use of ICT. Interview data showed continued disappointment about access to equipment (see p. 167). Teachers felt that leaders provided 'lip service', stating that supportive policy did not mean anything when accompanied by a lack of resources (see p. 167). Many teachers were not optimistic for plans on ICT integration (see p. 169). From the leaders' perspective, the issue of uneven provision has been raised at a university level (see p. 169).

The literature points to the importance of top-down support and Ertmer (1999) categorized such support as extrinsic. Organisational difficulties and the lack of technology was found to be a disabling barrier to integration of ICT. Helm (2015) found that in developing countries, universities were heavily reliant on government support). Buabeng-Andoh Charles (2012) and Elzawi and Wade (2012) recommended that governments should have to start with policies that guide and assist ICT implementation. Hence, in the literature, Collins and Halverson

(2009) have discussed the importance of policy supportive of curriculum. Away from the policy sphere, the literature has commented on and also added to an optimistic discourse about technology and its contribution to society. Teachers were aware of the changing nature of the society and talked about the everyday use of technology in life as well as in education.

RQ4. What are the consequences of using ICT?

Table 58: Summary of results for research question 4

Research Question	Survey	Interviews	Observation	Literature	Consistent or contrasting
What are the consequences of using ICT for language teachers?	ICT was said to encourage: More interactive lessons; Smoother lessons; More student-centered learning; and Access to information through LMS.	ICT was said to lead to: Expansion of learning time; More organized lessons; Support for individual learning; Authentic resources; Increased motivation; and Examples of creativity and expansion.	Observations saw ICT use such as: Students smart phone use; Display of information in the class on the laptop; Ease of use of Internet; and The three-part lesson.	Literature shows ICT provides interactivity. Promotes student-centered learning; Issues of cost effectiveness; Gap on measuring learning outcomes; and Discourse around curriculum change.	Different sets of data are consistent. Self-reported benefits of ICT are agreed. Pragmatic benefits of ICT was found. Interviews present examples of creativity and expansion.

Overall, as has been discussed earlier, all sources of data confirm there are benefits in ICT use. Survey data showed the most frequent use of ICT was the use of Internet to access resources, the use of PowerPoint presentations to present information and to interact with students through emails and messengers. Teachers also used ICT by sending students online resources through the LMS 'Intranet' (see p. 104). The majority of teachers agreed that teaching with ICT helped lessons to be more interactive. Most of the teachers preferred to use ICT more in their teaching as ICT was considered to enable more engagement (see p, 106). In addition, teachers agreed that ICT helped their lessons to be more student-centered.

In the interview data, ICT was said to help teachers to adjust to the context by expanding teaching and learning time by allowing extra activities beyond the 50-minute lesson time (see p. 144). In the interviews, teachers talked about organizing lessons better through the use of PowerPoint presentations (see p. 146). The LMS had become a fundamental aspect for managing courses and students could access learning material online. The ways in which teachers communicate with students has changed due to advances in ICT. For example, teachers use WhatsApp and emails to keep in touch with their students and to be accessible if support was needed as shown in the interview data. In terms of training, teachers comfortably talked about learning online and with remote conferences with other organizations. The majority of teachers suggested that ICT helped students with independent learning (see p. 148).

In an incremental way, ICT is changing the nature of teaching and learning. However, there are limits on this:

1. What is available in the classroom means that what is happening is constrained, so what you can achieve depends on the support and access given. Observation data showed how students learn in the classroom using their smartphones and how information is displayed by teachers using their own laptops. These small changes were important but limited.

2. There is not a revolution in learning. Schemes of work are conventionally organised and the teacher role is a directed one. Most classes fit the three-part lesson: introduction, practice and then whole class discussion. There were changes in teacher-student relationships, but this was still a directed curriculum and the teacher's role was important to support the discussion, as well as in guiding and directing students. Although using technology made it easier to communicate with others; to prepare classroom teaching resources; to give students access to a wider range of resources, the dynamics of classroom teaching was similar whether technology was used or not. The major contribution of technology was to make teaching clearer, more engaging and expand beyond the classroom.

3. Some important changes are not directly related to technology. There was a change of culture in higher education, for example there was a more responsive and consumerist culture, which was having an impact on teaching and learning. Teachers were more open, and institutions were less hierarchical. There were further changes too, including the promotion of the Kazakh language and the three-language curriculum which had little to do with technology. In the past, English as well as other languages were taught with the focus on grammar, reading comprehension, translation and written composition, with little practice in listening and speaking. But at the time of this current study research, language teaching has become focused on being more communicative and more active. Technology assisted this process, but this would have happened regardless. Two decades ago, the purpose of education was implicitly to assist a collectivist Soviet culture, so there was little space for critical thought. The Ministry of Education has changed the curricula to reflect new aims to "lifelong learning" – in other words, how to learn for one's whole life. This was noticeable from the interview when teachers talked about the teaching pedagogy and in observation data, when teachers used different approaches and used more open discussions. Teachers did not link the new methods to learning theory, but they did believe that they should teach students with creativity and dialogue, seeing ICT as a contribution to life-long learning.

Outside of teaching and learning, the use of ICT has other consequences. First, outside the institution, it allowed greater opportunity for staff development through access to courses, seminars and debate. It allowed for greater commercialization by offering courses to learners and teachers in other countries. On a personal level, it helped teachers manage their everyday lives, for example for communicating with family, managing payments and so on. For the institution, ICT has important resource consequences: the university has to provide internet connectivity, and equipment for teachers and departments. This imposes considerable budgetary pressure and a great challenge in its maintenance. This raises an ethical point when it comes to expecting teachers to address shortfalls by using their own equipment as well as awareness that not all teachers and students have the same access to technology. As a state university, the diversity of students is quite large.

In relation to literature, many of the gains around ICT use reported in this study are well reported as seen earlier. Wekerle et al. (2020) argued that the use of ICT could be promoted as more useful when associated with more active, constructive and interactive activities. In another study, the use of an interactive TV was found to be attractive (Fallahkhair, Masthoff and Pemberton, 2004). In the study with 83 French students conducted by Healy-Beauvois (1997), a synchronous CMC chat environment for language practice was found to aid interactivity and practice of language skills.

ICT use in the literature was mostly associated with a student-centered learning environment (Blaschke et al., 2015). However, this idea has been critiqued, for example, Bond et al. (2018) argues that technology was not the only solution and face-to-face teaching can also support a student-centered learning environment. Marcelo et al. (2015) found that use of ICT was often informed by teacher-centered assumptions, when these were dominant.

Kripanont (2007) stated that academics benefited from ICT as with it, they are provided with Internet access, to resources, dissemination of knowledge and engagement. This is in line with

many research papers which address the potential of the Internet to improve quality and overcome barriers of time and distance. However, Gamlo (2014) found that these issues remained in reality. Even though technology has benefits for language teaching and learning as stated earlier, changes need to happen over time (Huebener, 1965; Salaberry, 2001). There is not yet a consensus around the impact of technology on the curriculum in the literature (Robinson, Marshall and Stamps, 2005; Keengwe and Onchwari 2008; Laaret al., 2017).

How and why do language teachers in this case study use / not use ICT?

We come now to the larger question as to ‘why do language teachers use / not use ICT in teaching?’ The answer is discussed in relation to a diagram showing teachers’ perceptions within a multi-layered system. This shows encouragers and discourager of ICT use at the centre of the decision to use ICT and explores how these encouragers and discouragers sit within an entire ecological system. The diagram is divided into three layers: teacher characteristics (beliefs, attitudes and skills); institutional arrangements (provision, support, access); and beyond the institution (discourses, student experiences, teacher everyday experiences).

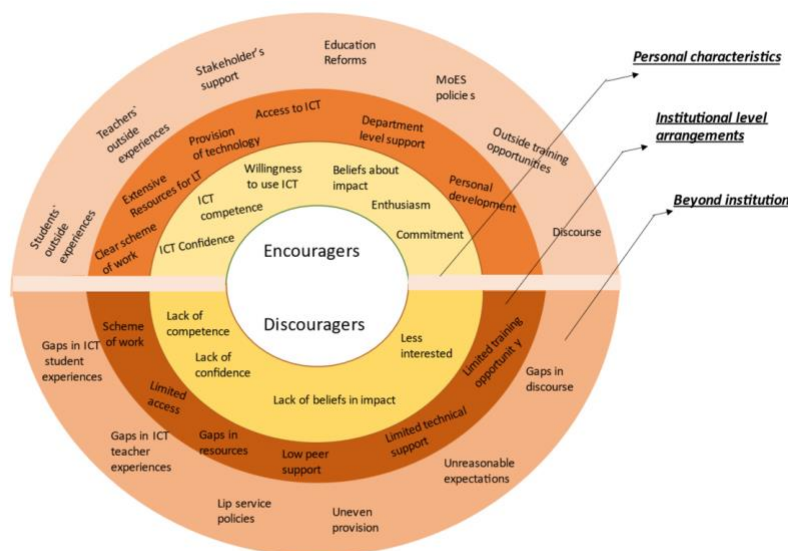


Figure 1: Ecological framework of teachers’ perceptions on ICT use.

The first layer consists of teachers' personal characteristics associated with their positive beliefs, attitudes, and feelings of confidence and ICT competence as an encourager, while lack of belief in ICT impact, low feelings of confidence and competence serve as discouragers. These teacher characteristics can create a climate in which one wants to use and expects to use ICT or, in contrast, creates a feeling of uncertainty about such use.

In the middle is the institution which covers the classrooms, the meetings, the policy documents, and the leaders. This layer creates an opportunity for when support is given for ICT use and professional development is focused on ICT. The institution encourages ICT use by equipping classrooms and the institution itself with technology. However, at this middle level, there are discouragers which cover lack of institutional support for professional development, poor access to language resources and to technology access in the classrooms. The decisions over ICT are constrained by the physical and cultural world of the institution. Physical components of institutional arrangements include: providing technological infrastructure (computers in the classrooms, projectors in every room) and high speed Internet. These physical components at the institutional level will influence the types of ICT use and consequences. Cultural components include: schemes of work; ICT use guidance; and support. One of the main influences on culture are champions of ICT use, the skilled teachers, or managers who encourage other teachers to use ICT and share contextualized information about the ICT use. At times, teachers, who are at the first layer of the system, directly participate in the institutional (i.e., second layer). For example, teachers may attend curriculum planning meetings in which technology is discussed and leaders (who are also teachers) may be present at faculty meetings when plans for technology provision are developed. However, some decisions are made in meeting in which teachers do not take part in, but these decisions have a substantial impact on their work.

The third layer is what goes on beyond the institution. This provides the encouragement for the university to use technology; for example, this layer covers discourses around the role of

technology in modernizing higher education, the use of technology by young people and the availability and everyday use of technology by teachers themselves. At the outer layer, there are resources to assist language teaching which are extensive online resources for teaching English and Russian languages and gaps in online resources, which serve as a discourager, for Kazakh language teaching.

Each layer is interconnected. For example, beliefs and attitudes lie at the centre of the model but they are formed by experiences beyond the institution (personal use of ICT and experience of technology discourse) and in the institution (e.g., meetings with leaders and other teachers).

Thus, personal characteristics are not fixed, teachers have the capacity to change through experience. This is a dynamic system. A further element of change is generational. New cohorts of teachers not only have changing experiences of ICT but different beliefs about authority.

These young individuals within the education system can become facilitators of change and may associate the use of technology with a more modern and democratic working environment.

This model works by helping us to understand how user perceptions of technology are formed. High users are ones who will see opportunities and will aim to use ICT if they can see a chance to do so, even if it means using their own personal equipment. Moreover, high ICT users perceive institutional arrangements more positively when reporting about technology provision, support provided for training and innovative adaption of ICT in the curriculum. They focus on the impact of ICT on students, colleagues and their received support from different stakeholders including, students, IT service and leaders. Nonetheless, many remained frustrated about gaps in ICT provision and of leader support for technology. They were also critical of policy and felt a sense that the Ministry of Education was paying a 'lip service' to promotion of ICT.

In contrast, low users of ICT often view themselves as reluctant, albeit they were able to use technology for personal use. At the institutional level, low users saw the system as working against technology; there was limited time, a busy schedule, a lack of support and more

importantly access was not there. Beyond the institutional level, low users were knowledgeable about the requirements of policy and aware of their importance for curriculum change and discourse. However, they felt challenged to use ICT because of lack of resources and support.

In between these low and high users were medium users of ICT who see a mix of encouragement and discouragement. Medium users perceived themselves as reasonably confident and competent in respect to technology. They used ICT but did not feel supported at an institutional level to use it. They viewed themselves as realistic. They felt that at the institutional level, ICT was valued and support was provided but felt there was too much rhetoric and too little practical help. They fulfilled the requirements of the curriculum in relation to ICT as a minimum and did not go any further.

What emerges from this ecosystem of encouragers and discouragers is a mixed level of ICT take-up and even among higher users, there is continuity in teaching and learning over time, albeit with change at a surface level in relation to the curriculum. However, there is not a whole scale change which those advocating technology often propose.

Layering the influences on the decision to use ICT allows us to see the tensions within the system. For example, there are teachers with a high intention to use ICT but are unable to do so because there is not enough time in place for them, but similarly, there are teachers with a low intention to use ICT but an awareness that there are expectations to do so. The system has the potential to change but there is not an easy answer as to where change will come. Teachers have reported on bottom-up innovations such as use of mobile phones or Video script in teaching as well as top-down innovation or the enforced changes in relation to the curriculum. If trying to improve the take-up of ICT, the challenge is to make the different parts of the system join up.

This would require change at all levels:

At the teacher level:

Teachers have a responsibility for introducing bottom-up change into the departments so that whatever is implemented fits their pedagogy and addresses the problems they have in their own classrooms. They should consider:

- Bottom-up working groups and curriculum inquiry groups.
- Steps to be more collaborative by sharing resources and experiences.
- Becoming more active agents through small interventions and experiments in relation to ICT use pedagogy.

At the institutional level:

Institutions can provide training, not just to support or to introduce technology, but in the pedagogical use of ICT that would promote the successful integration of ICT into the learning environment by merging the technology appropriately within the education setting. This would create an environment for ICT enthusiasts to feel supported. Teacher development opportunities are also important, not just in discussions about the importance of ICT, but in providing support in developing ideas e.g., action research projects to address creativity and so others know about them, thus shaping peer support.

Leaders should consider:

- Schemes of work which specify the use of technology where relevant.
- Providing more physical resources and IT services support for hardware and software.
- Providing Pedagogical training, ICT teaching and learning support.
- Supporting action research projects (teacher support).
- Developing a more collaborative culture of learning within institution departments to develop teacher champions of ICT use.
- Create continuous discussions around technology use among champions of ICT facilitators.

Beyond the institutions:

Beyond the institution at a policy level, decisions are taken to promote technology but there are constrained by limited resources and scheme of work. If MoES provided enough funding for ICT instead of simply promoting technology in a general sense, this would address the issue of access. This might make an enormous change which is impossible to solve with just teachers` agency. Thus, institutions should provide

- External funding: Further funding for ICT from MoES.
- A clear and coherent vision and strategies related to ICT reforms.
- More fruitful collaboration between MoES and institutions to support the personal development of teachers in other technologically advanced countries.

What does the view of ICT take up earlier suggest about the future take up? The model (Figure 1) is not predictive, but it can help us reflect on possible future scenarios. For example, discourse about technology beyond the institutions or policy discourse around the use of ICT can be expected to continue to promote change. In the institutions, pressure is reflected in demands for access to resources and curriculum change but experiencing discouragers at all layers of the education system might create another pressure and may dampen further use. For example, in this study, there were very experienced teachers who had wide exposure to ICT use when working with other institutions and who had taken advantage of support in terms of training, access. However, since moving to the case study institution, they had become disappointed by the lower access to ICT and their enthusiasm and use of ICT had tailed off. This shows that in a system in which technology is not given or easy to access, teacher agency becomes critical.

There will, in the future, also be unpredictable events and perhaps, the biggest encourager may come from beyond the institution, as seen in responses to the COVID-19 pandemic. That has created major rapid boost in HE in a short term. Underlying conditions that contributed to this

rapid boost in ICT in HE would perhaps, might have some lasting impacts and some things will continue through after the crisis.

An ecological approach to understanding technology

Figure 1 offers what is an ecological approach by seeing teachers' use of ICT as at the intersections of different layers of influence. The considerable strength of the ecological approach is the decision that is taken in a context which is considered both physical (classroom, Internet, computers) and cultural (discourse, scheme of work, management, vision and ethics), thus showing the importance of agency in a particular context. There is a teacher agency but teachers are constrained by what is possible. It is not about people or systems but how teachers work within systems. As an example of this the same teachers behaved differently in respect to ICT use when they moved from one institution to another.

Ecological approaches have their roots in Bronfenbrenner (1979). Bronfenbrenner (1979) remains one of the most widely used theories to understand child development by showing how the child is influenced by different settings (micro-macro) and how this affects child growth. In Bronfenbrenner, there are five layers explained earlier (see p.24). According to Bronfenbrenner, an ecosystem is ordered into five different layers such as micro (immediate environment directly experienced by a person), meso (interactions of microsystems linking two or more settings), macro (culture embedded in education setting), exo (links two or more settings but do not contain the developing person) which are all influenced with each other while interacting.

My model draws on the idea of Bronfenbrenner's by showing that there are nested interdependent layers. Like Bronfenbrenner, it is recognised that teachers' agency is nested within a wider ecosystem. Figure 1 therefore holistically looks at both the system and the person. However, it differs from Bronfenbrenner as it offers a system of (1) teacher characteristics; (2) institutional arrangements; (3) beyond institution. The current model is similar, but it is more accessible, and hence transferable to other contexts. This framework is also different to

Bronfenbrenner`s framework as: a) the context is professional work and not child development; b) the idea of encouragers and discouragers are more explicit as it recognizes that the same environment can be seen very differently; and c) it includes cultural and physical dimensions across all layers.

This contrasts with essential unecological models such as TAM (Technology Acceptance Model) and one of the widely known models to understand the acceptance or the abandonment of technology in teaching and learning based on human behaviour predictions and beliefs. Davis (1989) adapted the TRA (Theory of Reasoned Action) and proposed TAM which argued that the use of technology can be explained by behavior and teacher beliefs. Davis (1989) suggested users` beliefs can be defined by their motivation: perceived usefulness (beliefs about on the job performance improvement); perceived ease of use (beliefs around the degree of effort in learning to use of ICT); and attitudes towards the technology.

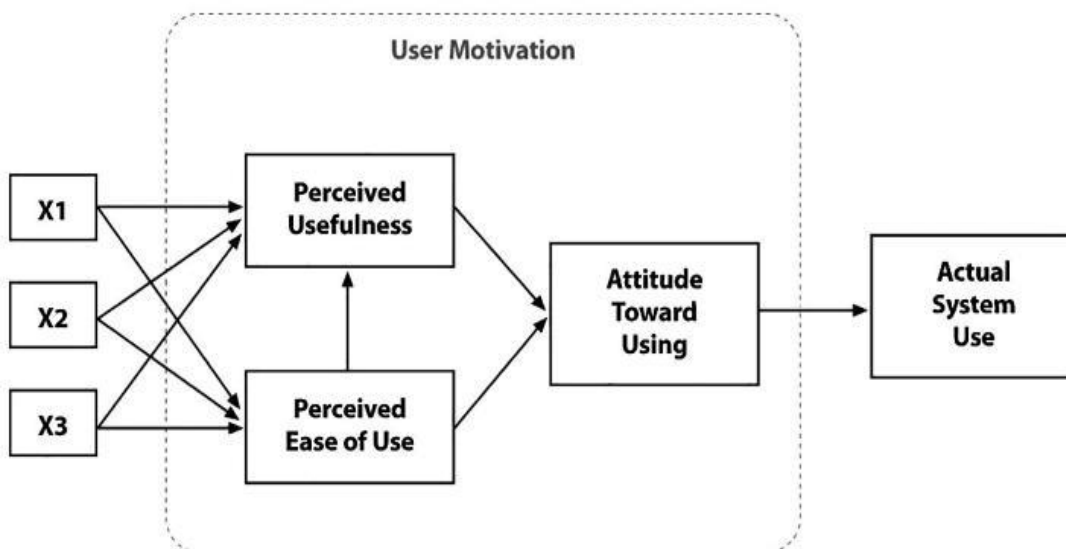


Figure 2: Technology Acceptance Model (Davis, 1986, p. 2574).

The relationship between technology beliefs and technology integration is also strong in Ertmer et al. (2002). The finding of her work with 12 K-12 teachers showed that 11 out of 12 teachers` beliefs contributed to teacher practices. She concluded that the teachers` beliefs were evident in

their teaching practices. Even though Ertmer (2012) later distinguished between internal and external factors of teacher beliefs, she championed the idea that beliefs were the final obstacle.

In contrast, my more ecological model shows beliefs are important but there are other factors at each layer that can support or hinder teachers' implementation of their beliefs about ICT. This model is about the people and the system. It shows how it is important to look at both. It explains teachers' perceptions on ICT use because their personal characteristics matter and has to be taken into consideration, as well as the system itself. It is difficult to talk about teachers' personal characteristics without paying attention to the system or vice versa.

Ecological framing is underdeveloped in technology research, but it is not new. For example, Zhao and Frank (2003) have noted that within the multifaceted school social environment, the use of ICT cannot be investigated separately in isolation. Therefore, they look at decisions about ICT use made by teachers in a wider system. Zhao and Frank (2007) reported a study of 19 schools, using an ecological metaphor, namely the zebra mussel in the Great Lakes. Zhao and Frank (2007) saw an ecological system with a classroom nested within a multilevel ecological hierarchy including "government agencies, societal institutions, local community organizations and the school bureaucracy" (p. 815).

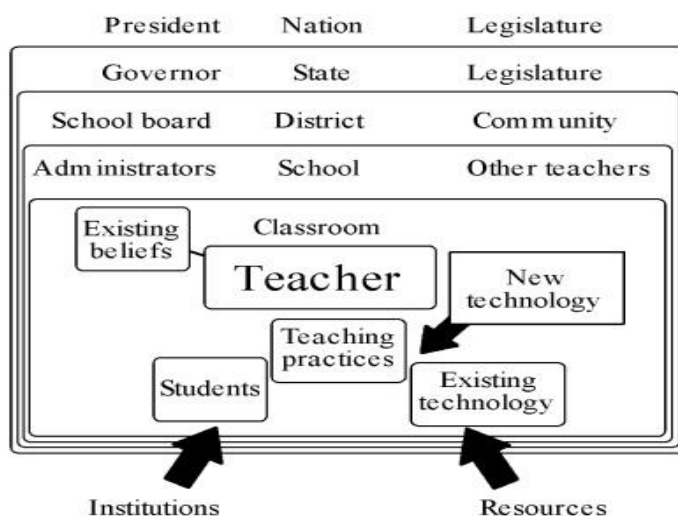


Figure 3: Ecological Perspective (Zhao & Frank, 2003, p. 815).

The key findings in this study illustrated evolutionary phases of technology adaptation. They also found that teacher-level factors were important in promoting technology use in schools and these factors included four basic mechanisms of change: recruitment/selection (hiring adaptable teachers to ICT); training and socialization (beliefs on the value of IT); providing opportunities to explore and learn (allocating time to training in their specific contexts); and leveraging change through the social context (awareness of agents to school culture).

Using the ecological metaphor, Zhao and Frank argued that the technology was not ecologically suitable for the system. They explained how mussels thrived and how they carried on because they found a niche. In contrast, computers do not find an easy niche and they are used everywhere but do not thrive.

Mussels in Great lakes and technologies in schools are both introduced in an unfamiliar environment. To understand how these mussels spread, ecologists must understand geographical characteristics of the environment (conditions, temperatures, characteristics of species). Similarly, Zhao and Frank (2007) tried to understand the use of computers in schools as “ecologists”. In order to analyse the uses of technology, they established four metaphorical equivalents of ecological framework: 1) schools are ecosystems; 2) computers are living species; 3) teachers are keynote species; and 4) innovations (exotic species).

They viewed the schools as ecosystems containing many parts and relationships including both biotic (e.g., teachers, students, parents, and administration) and abiotic (e.g., physical setting, location of computers, grades, subject thought). As computers seem to follow a similar process of evolution, computer uses treated as living species, based on their assumptions that some technologies survive fitting the environment, others fit less or even disappear. In Zhao and Frank’s (2007) ecosystem, teachers are seen as “a keystone species” which live and work in social groups and they may help and respond to others in their organization by building their social capital. The last metaphorical equivalent of ecological framework innovations is like zebra

mussels' invaders from outside, when they interact with existing species several consequences may result.

The ecological framework offered by Zhao and Frank (2003) is a creative model; it is dynamic, even chaotic, but it is too technologically focused and too literal in terms of an ecological metaphor. They consider the technology as an active agent which has its own characteristics and lives in cyclic pattern (evolving, surviving, disappearing, and the return of new innovation with new characteristics). Even though technology has an ever changing influence without continuous professional development within institution and beyond institutional support, this influence may be restricted. Secondly, they have identified teachers as 'selfish' in that they prioritise their own classrooms, but they have to accommodate to an environment. However, Zhao and Frank have too little to say about the layers in this environment. Thirdly, my other doubt about this framework is to what extent is it ethical to look at teachers as living species rather than human beings?

A second paper, Davis (2008), divided the ecosystem into classroom, school, and education system and viewed the adaptation of ICT, teachers' practice by looking at the implementation of technology. Davis (2008), who was inspired by Zhao and Frank's (2007) work, developed a multilevel ecological hierarchy to explain the multi-stages processes. In the use of an ecological framework, Davis (2008) identified four categories across the educational zones between the levels that could stimulate or discourage its use: commercial (organizations develop educational programmes), political, bureaucratic (institutions develop cohesion within regions) and professional. From global perspectives, she emphasized that these various ecosystems interact in the global biosphere including a micro ecosystem (a classroom), which is nested within another ecosystem, a school which is nested within a nation's macro educational ecosystem. Davis (2008) suggested that viewing the practice of IT by teachers as an adaptation might become extinct.

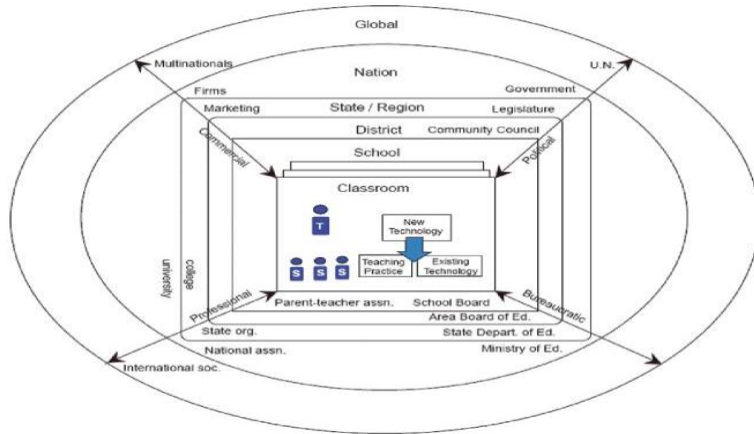


Figure 4: Influences of IT in the global biosphere of education, including nested ecologies (Davis, 2008, p. 509).

From the school perspective, she interpreted the adaptation of school practice to ICT in stages: 1) localized exploitation, where one or more teachers adopt IT and demand increases; 2) internal integration, when advanced users work in collaboration; 3) transformation of the pedagogy and education practice; 4) embedding ICT, when schools collaborate with other schools; 5) and a revolutionary stage, when the organization redefines its scope. These stages of adaptation are not the same with every school, however, an ecological perspective promotes or appreciates increasing implementation of ICT.

She also suggested a new leadership role within the school, someone who is responsible for IT. This is because it is necessary to promote education renewal and manipulate the school ecology. Davis (2008) illustrated ICT use starting from with a global ecological perspective and narrowed into the teacher`s perspective as a leader of innovation.

And later, Davis et al. (2019) identified the technology adoption of young children through the Arena Framework which merges the multiple perspectives` influences from local to global ecosystems.

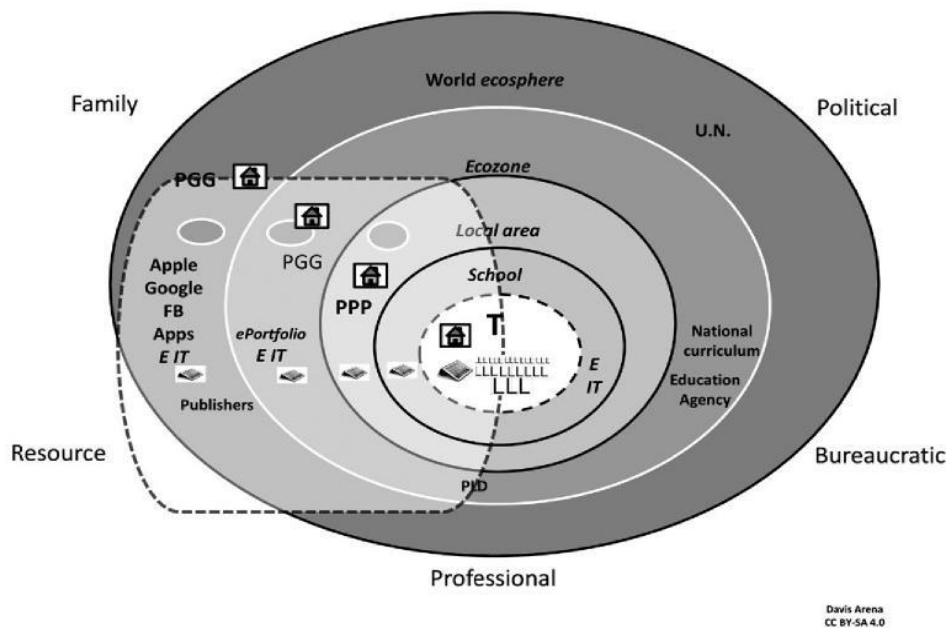


Figure 5: Arena Framework (Davis et al., 2019, p. 1322).

This framework provides a joint explanation of education with technology, leading from local to global influences. Davis et al. (2019) puts teachers and learners at the centre (the keynote species of the learning environment) mingled with the physical and technological world. The direct and indirect influences of the system are consisted of five sectors: family, resources, professional, bureaucratic, and political. Digital applications are spread across many ecosystems. The organizational culture affects teachers as the keynote species, and teachers affect the organizational culture.

This framework in my thesis stresses the physical and cultural nature of the environment and shares similarities with Davis`s ecosystem. However, it has a stronger focus on how teachers view the system and the idea of a system offering both encouragers and discouragers. My model is also simpler, allowing greater transferability and use in other contexts.

The third paper, Rana et al.(2019) explored the implementation of ICT in Nepal and shows how NGOs have been trying to fill the gap between policy and schools. This study used an ecological model, one offered in Weaver-High Tower`s (2008), to show the challenges and opportunities of

ICT policy implementation. The components in the model were: 1) actors (members of various groups policymakers, NGOs, learners, teachers, parents); 2). symbiotic relationships (government and NGOs, organisations which work independently for shared benefit); and 3) environment and structure (extant conditions, pressures, inputs). The framework clearly shows how policy and practice does not line up and demonstrates the considerable gaps in take-up. For example, policy makers do not liaise enough with teachers or consider the readiness at the school level to embrace technology. This somewhat echoes with the Kazakhstan context, although here, there has been much greater consideration of the resources and support needed.

Summary

- As highlighted in the findings chapter, this framework has presented the different layers of the system: personal characteristics; institutional arrangements; beyond the institution.
- The model is used to give an explanation of how different teachers see the ecological system and why some make more use of ICT than others.
- The ecological model is contrasted with approaches that focus unduly on teacher beliefs.
- Other ecological approaches have been described and the reason for creating a new model has been given.
- The big idea of my model is that it is accessible and dynamic shows how the take-up of ICT needs to be considered holistically.

This framework is helpful to understand the most important physical and cultural aspects across three layers. Moreover, the framework may be used as a guide for different stakeholders to improve teachers` use of ICT in Kazakhstan`s tertiary setting.

Chapter 6: Conclusion

This chapter aims to provide a summary of the main findings and recommendations. The chapter is divided into eight sections: the overview of the study; the outline of the thesis; summary of the main findings; contribution to knowledge (theory and practice); implications of the study for policymakers, teachers and future researchers; limitations of the study; suggestions; and personal significance. The thesis concludes with final remarks on personal reflection on my doctoral research journey.

The overview of the study

This study set out to explore language teachers' perceptions of ICT use/lack of use in their teaching at a single university in Almaty, Kazakhstan. This research is relevant given the contextual changes in the education system of Kazakhstan as discussed in previous chapters. These research questions have been achieved through the use of three different methods (questionnaire, interviews and observations). Applying mixed methods helped to answer the main research question: how and why do language teachers use/not use ICT within a case study university in Kazakhstan? Answering this question involved four sub-questions:

1. To what extent do language teachers and groups of language teachers use ICT in teaching in one university in Kazakhstan?
2. What do language teachers see as the benefit of using ICT and what helps them to use it?
3. What constraints do language teachers face in using ICT?
4. What do language teachers see as the consequence of using ICT?

Answers to these research questions are summarised below.

The first research question was: "To what extent do language teachers and group of language teachers use ICT in teaching in one university in Kazakhstan". The most frequent use was the Internet to access resources, and the use of Power Point presentations to display teaching

material. The widespread use of smart phones, emails and social media was also found in survey data.

The reasons for regular use of ICT outside the classroom were lesson preparation, compensation for limits on lesson time, and staying connected with people. In the classroom, teachers tended to use ICT for displaying information on Power Point slides and using multimedia where possible. Students as well as teachers were encouraged to use their own laptops, phones, learning platforms (Intranet) in the lessons to search and present information. Teachers' communication with students was mainly achieved by emails and WhatsApp to provide support for students during exams. The findings showed some creative use of ICT such as Video script, quiz, eBooks and Instagram to teach pronunciation and to practice grammar. The majority of teachers were differentiated as high, medium, low ICT users. In spite of the lack of access to ICT resources, high users saw possibilities or found other ways to get around difficulties, bringing their own devices into class and seeking for opportunities to personal development. In contrast, low ICT users saw themselves reluctant and challenged to use ICT but preferred to use for personal interests.

The use of ICT was also differentiated by age group, language taught and teaching experiences. For example, English language teachers could access different teaching resources compared to Kazakh language teachers who were limited with availability of online resources. As shown in the survey data, younger teachers tended to use ICT more, but not all young teachers were frequent users, while some older teachers were frequent users. However, at the individual level, teachers' personal characteristics, especially their beliefs on the value of ICT, seemed to be the key mediating factors for all groups of language teachers. But their beliefs were influenced by the working environment.

The second research question was 'What do they see as the benefit of using ICT?' ICT use was positively perceived by a majority of teachers as they believed that ICT encouraged engagement,

impacted on students' motivation and provided variety in classroom teaching. The majority of teachers believed that ICT helped make the planning of lessons easier and kept them up-to-date with their teaching resources. Teachers shared the idea of online collaboration with other colleagues to participate in online conferences and seminars. Outside the classroom teachers believed that ICT facilitated inclusion and created opportunities to meet other students and even people in other countries. Some of the benefits of the use of ICT use were observed, for example, watching video clips to create further discussion and easily accessing the Internet to search for information. However, a few teachers found ICT use distracting for students.

The third question covered language teachers' perceptions on encouragers and discouragers of ICT take-up. Teachers' views were organised around the themes of access, personal qualities and the wider environment. For example, access was seen by both high and low users as a discouraging factor. However, it was revealed that high users' personal qualities (willingness, beliefs) helped to overcome the issues related to access and to become strategic if possible. Major encouragers were training from outside organisations, access to authentic material, support from leaders and their personal qualities. Major discouragers consisted of lack of training, limited access to resources, unavailability of portable projectors and no computers in classrooms. However, leaders perceived the level of ICT resources was at a sustainable level and some experienced teachers also viewed the borrowing of portable projectors, ownership of laptops, and training provided from outside organisations as quite positive.

Most cited personal qualities that enabled or disabled the use of ICT in the literature were teachers' beliefs, their competence and confidence. The lack of teachers' beliefs restricted the use of ICT, though teachers' willingness, enthusiasm, commitment helped to create additional reasons to contribute to ICT take-up.

The wider environment was both an encourager and discourager for the take-up of ICT. The wider environment included different stakeholders such as students, IT personnel, leaders,

external training providers, and the ICT discourse in the Ministry of Education and in the wider society. In contrast, lack of support, lip service, and uneven provision, were viewed as discouragers. The encouragers of the wider environment were clearly perceived as preventing access issues and professional development issues, both of which could facilitate improvement of teachers' personal qualities, sustainable working policy and provision.

As for 'What do teachers see as the consequences of using ICT?', teachers saw pragmatic benefits including the expansion of learning time, more organised lessons, and authentic learning material that supported student-centered learning.

The main research question was 'How and Why language teachers use/not use ICT at the case study university in Kazakhstan?'. This was answered by a model which showed encouragers, discouragers and how they might lead to the use of ICT or not. Different sets of data showed perceptions that were very much constrained or encouraged which were in line with teachers' personal characteristics, institutional arrangements, and beyond institutional backing. Different users of ICT reacted differently to their working environment which explained why some teachers were enthusiastic to use ICT compared to others and if the teachers' perceived themselves as high ICT users, this did not mean they would use ICT in teaching or vice-versa. Teachers' beliefs on the impact of ICT on learning was a key factor, which meant if teachers had a strong positive beliefs, they were unlikely to be constrained by the lack of ICT resources. However, teachers' perceptions could change, so they are not fixed and most often are influenced with the change of an environment.

How the thesis was organised

The thesis was organised into six chapters: Introduction; Literature review; Methodology; Analysis of quantitative findings (Surveys) followed by Qualitative findings (Observations and Interviews); Discussion of findings and Conclusion.

In the introduction, some background to the context was provided with a brief history from transition to transformation of Kazakhstan`s HE. It was clear that Kazakhstan`s education system was undergoing a significant challenge to address modernisation and the Bologna agenda. The most important aspect of Kazakhstan society was its multilingual nature which impacted on teachers` lesson planning as well as on universities` visions of change. I also provided some description of my own interest in the take-up of ICT among language teachers and my relationship to the context. For example, I am a supporter of ICT use in my teaching, and I knew much about this context where I grew up, received my education and experienced its developmental reforms. I pointed out the significance of my study by arguing my research contribution to the existing scholarship in Kazakhstan.

In chapter two, I present my literature review in a narrative manner, dividing it into four big themes, providing debate around the use of ICT including change; learner centeredness; learning outcome and tensions of ICT promotion in the first part. I showed that ICT was seen by different researchers as having the potential to improve teaching and learning. Then in the second part of the chapter, I reviewed the research and organized it around micro and macro related issues. I showed that in the literature, there was a focus on the micro level. I continued reviewing technology before and after the large-scale introduction of the Internet in language teaching and learning. This showed that many examples of ICT research were small scale interventions and exemplary. In the third part of my review, I discussed the relevance of theories, including ecological theory (Bronfenbrenner, 1979) to understand the use of ICT.

In chapter three, I covered my methodology. First, I discussed my research design, explaining my case study design and the choice of methods (mixed research methods) which were applied to answer my research questions. Secondly, the findings of my pilot study were reported. Thirdly, I described my analysis, issues of ethics, transcription procedures and translation.

In chapter four, I covered findings. The chapter included data analysis and discussions which fell into two parts, Quantitative and Qualitative data findings. Quantitative findings showed that the

lack of access to ICT was the main constraint. In general, most teachers had positive attitudes towards ICT and were competent enough to use ICT. Almost all teachers showed willingness to use ICT in teaching regardless of gender, and age. The data analysis and findings from the qualitative data collection from interviews found that teachers had limited access to teaching resources as well as ICT. Generally, teachers found ICT encouraging which facilitated student engagement. The interviews also showed the enablers and disablers of ICT use as perceived by teachers. Qualitative data analysis from observations covered findings of seven lesson observations and drew attention to the issues raised in the interviews and confirmed the difficulty of access related to the ICT use. It was observed that teachers as well as students brought their own devices into classroom, students were encouraged to use smartphones during the lessons and the use of ICT was also encouraged outside the lessons. The use of projectors was not seen. The key thing that was observed was the consistency of teaching approaches among teachers.

In chapter five, I draw out themes from my data analysis and discussed the findings in relation to the literature review and suggested a new adapted theoretical framework. In general, all findings from different sets of data were consistent. Only the use of projectors was not observed in the classrooms I visited. This chapter discussed both encouragers and discouragers of ICT use in relation to access, teachers' personal qualities and wider environment. Finally, the chapter relates all the findings to the ecological framework and finds it the most suitable model to this study.

In chapter six, the conclusion, I provided the summary and the significance of the main findings in relation to the research questions and its contribution to knowledge in the area of ICT. I also highlighted the implications to future research as well as providing recommendations for the take up of ICT at the HEIs in Kazakhstan and the case study university. In addition to recommendations, the limitations of the study are also presented. The chapter ends with a discussion of personal significance.

Main contribution

This thesis made a contribution in two areas: a contribution to knowledge and a methodological contribution.

Knowledge contribution

This study achieved the aim of raising awareness of why different levels of an ecosystem (personal characteristics, institutional arrangements and beyond institution factors) matter and how we can explore the use of ICT by looking at the encouragers and discouragers across all these levels. The suggested model (Figure 1) is based on an ecological perspective. This adapted model provides an ecological framework that shows that the use of ICT needs to be considered holistically by taking into account of the environment through teachers' perceptions.

This model may be useful to investigate similar cases in different contexts as it presents a holistic view of ecosystem with encouraging and discouraging aspects and makes an important theoretical contribution to knowledge. These aspects cover three different layers, taking into account the physical and cultural world that constrains or supports the use of ICT. This helps to show how teachers' personal decisions are influenced by a wider system.

The substantive strengths of the model are:

1. The theory considers both the physical and cultural dimensions of the ecosystem.
2. It is an explanatory study, and it shows what is happening in the take-up of ICT in one university in Kazakhstan and can be adapted to other contexts.
3. It describes the different layers of the system from the teachers' perspective and is helpful to understand high and low use of ICT.

The language teachers' use of ICT is an under-researched area in the context of the tertiary setting in HE in Kazakhstan. The discussion of ICT use in this context is a valuable contribution to a wider audience. Additionally, the study provides background knowledge of Kazakhstan, and

some general understanding of issues of post-Soviet countries associated with the formation of a new nation and that nation's developmental process.

This study also shed light on issues that teachers faced that contributed to ICT use, for example, access found to be the main issue but on the other hand, teachers' beliefs, their commitment and willingness to use ICT enabled the use. As explained above, this study has made a discussion of those barriers in theoretical terms through the lens of an ecological approach which is an important contribution to knowledge in general.

The study's practical contribution is to help understand teachers' experiences and their stance on imposed changes in academia.

Methodological contribution

The key methodological strength was the use of mixed methods among others that include:

- It provides findings from different sets of data.
- Respondents of the survey and interviewed number of teachers were quite representative.
- The thesis considered demographic factors in dealing with data analysis.
- The observation data shed light on what is happening on rather than what has been told.
- It presented contextual knowledge awareness.
- Triangulation was made possible between datasets, increasing trustworthiness.
- Narratively approaching the literature review provided richness to current discourse, underpinning methodology and the role of the theory.
- In dealing with data results, systematic analysis was involved (quantitative-SPSS descriptive statistics, qualitative-thematic analysis, observation-thematic analysis).

Implications and recommendations

Implications for policy makers (beyond institutional)

At the policy level, there is a desire to integrate ICT into teaching and learning. However, implementation of ICT, as shown in the data, is left up to the teachers with too little support and guidance. Different sets of data have shown the use of ICT is restricted with presenting information and searching for material on Internet. There are gaps in training and resources. Therefore, a clearer policy and greater support is needed without over regulation of the sector.

Collaboration between leaders is crucial in this process, especially in creating support and opportunities for training to integrate ICT in teaching alongside with pedagogy. The role of CDP is very important to improve teachers` skills. The findings showed that training courses related to ICT use were usually provided by outside organisations, and were held during summertime, allocating only limited number of teachers from each department. The training courses need to be specifically targeted at HE teachers with more places offered.

Teachers were constrained to use ICT because of limited resources. In order to address these problems, the MoES should consider providing additional funding to be used for the specific purpose of providing infrastructure and training. In addition, the MoES could provide:

- Clearer policies on ICT use with guidance to teachers as well as to students.
- Collaboration with university leaders and providing support for teachers` personal development in collaboration with other countries.
- Support for 'at a distance' bodies such as an institute for teachers.

Institutional implications

The key issues at the institutional level were limited resources, inappropriate training and scheme of work. The majority of teachers had positive views towards the use of ICT in their teaching,

which is also, in line with the literature. If this is the case, implementation of ICT should meet the needs of teachers as well as students and has to be developed based on their views.

Thus, institutional level recommendations include:

- The need for high ICT users to promote ICT among colleagues.
- Institutions working together to share ICT practice.
- Leaders' support in providing more appropriate training to cover both pedagogy and technology skills with some elements of research intervention.
- Sharing community practice by providing showcase events.
- Both technical and pedagogical ICT support.
- Action research projects to develop teachers' knowledge in working in constrained environments.

Teacher level recommendations:

Teachers should have to take responsibility to develop their skills and practice. They might consider:

- Trying out different forms of teaching approaches (flipped classroom, mobile learning and etc.) in order to gain more competence and confidence in using ICT.
- Creating a shared environment with colleagues and students in terms of resources and knowledge.

Limitations of the study

Several limitations were present despite the strengths of the study. The first limitation in terms of methodology was mentioned earlier in the thesis and regarded the delivering of the data collection. The investigation for the case study was limited to two weeks and because of that, some interviews were conducted via Skype with limited interaction. If I had provided more time,

I would have liked to do more observations of both of lessons and meetings. A second limitation is I would have liked to interview ministers and civic leaders.

The model presented here is relatable to other contexts, but it is not yet clear how useful it is for other researchers and needs more exploration in different contexts. As the study was aimed only at exploring teachers' perceptions, involvement of other respondents could have provided richness to the data.

Suggestions for future research

I would be delighted if future researchers adapted the proposed model or used it to inform their research. However, the larger point is that we need to work towards the holistic account of teachers' decision-making. It would be better if we start looking at the wider context in which teachers work. In the literature, there are many good examples of short-term interventions being dominated by the promotion of ICT. However, the most important thing we need to understand is how the system can change, otherwise teachers are not going to implement ICT in their teaching.

If future researchers are interested to explore this phenomenon, my suggestion to future research question would be:

1. Teacher's use/lack of use of ICT through the lens of ecological theory?
2. A tale of two stories of how and why technology use is viewed by students as well as teachers?
3. What kind of resources do Modern language teachers require in language teaching and learning?

Personal significance

I came to do a PhD with an aim to find answers for the ICT use phenomenon, bridge the knowledge gaps and understand the ways how language teachers use ICT in teaching and learning. I wanted to contribute to the development of knowledge in the field of Education and ultimately help language teachers in the take-up of ICT. After finishing my Master's in Education, I felt that I did not gain enough knowledge on the scientific research in Social Sciences. Nevertheless, I continued working as an English language teacher; here, I was interested in using technology in my teaching and was inspired to pursue a PhD to explore this topic. At this stage, I was so enthusiastic to use ICT and saw its potential to transform the language teaching and learning. For this reason, I endeavored to continue my studies to better understand the most up-to-date means of implementing technology.

When I finally started my PhD programme, I had so many questions but no answers to them. At the start of my journey, I was challenged to adapt to a new environment as moving to a new country really challenges all your schedules. It certainly dictates its own rules and ways of life. It can be frustrating at the beginning because you have to rearrange your lifestyle to new rhythm of life. But it is normal to experience certain things in the beginning because adaptation to new environments takes time. Then I discovered so many spoken Englishes used by local people that I found it quite difficult to understand. However, understanding new philosophical terms like ontology, epistemology and so on was one of my biggest challenges. My past research experiences during my Master's programme was different from what I had learnt from the UK. As I was brought up in the environment where thinking outside the box was not encouraged until recently, I found rather difficult to critically analyse the articles that I read.

The second year of my PhD journey had its own challenges too. After passing my upgrade paper, I felt that I understood what I wanted to adopt in my research which is interpretivist one with its focal focus on the exciting experiences of ICT use/lack of use in Kazakhstan's HE.

When I started reading about different factors that might affect the use of ICT, I found that in the literature, most factors discussed regarded those of teacher level (beliefs, attitudes, motivation and skills). At that time, I was not quite certain, but I thought there were some missing details that I wanted to look beyond teacher level factors. However, at this stage, after reading quite a lot of literature, I became pessimistic and my views on technology radically changed. I thought that we needed to step back and limit the use of technology in teaching as well as in everyday life.

Moving to the third year of my PhD, I purposefully signed up to different educational seminars in order to improve my skills and increase my knowledge. I also never missed the chance to attend workshops organized by my university department and started presenting my research work at local Post Graduate Conferences (PGR). During one seminar, I was lucky to be actively involved in a discussion about religious beliefs of secondary school children and how their religious beliefs were affected by different levels of actors from family members to the government. I found it very interesting and started searching for theories similar to it, then I came across with Bronfenbrenner's ecological theory. Even though I did not clearly understand how I was going to apply that theory in my own research, I believed that using it might be very applicable in explaining the use of ICT. With my supervisor's recommendations, we came to a conclusion that this theory is useful to understand teachers' perceptions and will add an important contribution to understanding teachers' perceptions take-up of ICT at a tertiary setting of Kazakhstan. During this stage, after having collected my data, my views on technology remained pessimistic. It is because that I found that while the teachers were enthusiastic to use ICT, they struggled and experienced constraints because of a lack of support.

After all the experiences that I went through, now I can say that this PhD journey was not a lonely journey as it may have seemed. Doing a PhD requires a lot of collaboration, for instance, you collaborate with the authors of the articles that you choose to cite in your literature review,

you collaborate with your participants of your research, colleagues and the most importantly with your supervisor. Collaboration with my supervisor was crucial because he was the one who directed me throughout of my journey, providing support with all his patience. I was so privileged to work with Dr. Hammond as he has a long-standing expertise in the field of ICT in Education. I can admit truly that without his dedication and friendly supervision, I would not be able to complete this study. He had shown me the best qualities of an excellent supervisor that will lead me to my own future role as a supervisor. During this stage, my views on technology became quite balanced. With the Covid-19 pandemic, my whole existence, the way how I organized my life depended on technology. I thought some things needs to stay because I found online interaction quite useful as it became the only way to stay connected with others, a rainbow of my computer screen. I cannot say that I could easily adapt to new innovations of technology but rather appreciate the opportunities that they create.

In conclusion, as I mentioned in the beginning, I came to do my PhD in order contribute to research and understand ICT use phenomenon. However, I would like to add that my PhD journey experience shaped me, made me realise my personal significance and understand my own self phenomenon. This experience helped me to find myself by positively shaping my academic growth. This journey is only the beginning to my career in academic research and I really hope to link my future with research to be able to contribute to the development of ongoing education research with my acquired skills, knowledge and experience.

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Appendices

Appendix A: Ethical Approval(scanned copy)

Application for Ethical Approval for Research Degrees

(PhD, EdD, MA by research)

Student number:1561621

Student name: Akmarzhan

PhD EdD A by research

Project title: **Why do language teachers use / do not use ICT in teaching and learning in Higher Education in Kazakhstan: a mixed research study of language teachers in al-Farabi University**

Supervisor: Michael Hammond

Funding body (if relevant):

Please ensure you have read the Guidance for the Ethical Conduct of Research available in the handbook.

Methodology

Please outline the methodology, e.g. observation, individual interviews, focus groups, group testing etc.

A mixed research case study involving Kazakh, Russian, English language teachers. The study consists of 2 phases; Phase 1 the questionnaires will be distributed to university language teachers. Phase 2, a number of teachers from three language departments will be interviewed with only participants who indicate their interest after completing the

survey. Participants have freedom of choice whatever the convenient way to choose: face to face, by phone, and they are free to choose a place and time.

Participants

Please specify all participants in the research including ages of children and young people where appropriate. Also specify if any participants are vulnerable e.g. children; as a result of learning disability.

Participants in my study will be language teachers of the targeted university al-Farabi in Almaty, Kazakhstan.

Respect for participants' rights and dignity

How will the fundamental rights and dignity of participants be respected, e.g. confidentiality, respect of cultural and religious values?

Privacy and confidentiality

How will confidentiality be assured? Please address all aspects of research including protection of data records, thesis, reports/papers that might arise from the study.

As a researcher I will respect cultural values and be explicit in keeping confidentiality and professionalism, in relation to engagement with participants during the study. Collected data during interviews, and questionnaires will not be shared with others. Additionally, clarity on responsibilities of the participants, the time involvement, how data will be analysed and protected will be given. The identities of the participants will be anonymous and will be referred to using aliases in the thesis. Permission will be asked from participants to record their voice and recordings will be destroyed afterwards.

Consent

How will prior informed consent be obtained from the following?

From participants:

Before conducting the research, a signed consent will be obtained from all participants. In the questionnaire an information about the study will be provided. The participants will be given the opportunity to ask the researcher questions, prior to the study and an opt in strategy will be adopted.

Written consent will be obtained to record the interviews using a digital tool. If at any point a participant decides not to proceed with participation in the study, this will be respected. All consent will be in Kazakh and Russian languages to assure that participants understand before signing.

From others:

I will contact the al-Farabi university and I will get an official consent from department managers.

If prior informed consent is not to be obtained, give reason:

Will participants be explicitly informed of the student's status?

Yes, this will be clarified to participants and they will be informed in the information sheet who I am before conducting any data.

Competence

How will you ensure that all methods used are undertaken with the necessary competence?

Before carrying out a pilot study I completed ARM course provided by CES department. I have already tested my study instrument with some of the teachers before using it with some of the teachers before using it with a larger sample. I discussed the methods with my supervisor.

Protection of participants

How will participants' safety and well-being be safeguarded?

I do not expect the study to raise sensitive issues but if participants were upset during the interview or observation process I would cease the interviews and reassure the participants of confidentiality.

Child protection

Will a CRB check be needed? Yes No (If yes, please attach a copy.)

Addressing dilemmas

Even well planned research can produce ethical dilemmas. How will you address any ethical dilemmas that may arise in your research?

For any other ethical dilemmas that might occur during the study will be reported and discussed with my supervisor. However, in order to prevent the study from ethical dilemmas the data will be carried out in a sensitive and not-stressful manner.

Misuse of research

How will you seek to ensure that the research and the evidence resulting from it are not misused?

Firstly, I will design my research to access in depth information. Secondly, I will try to ask the right questions in the right environment. And to insure the misuse of data, I will organize any files that contain contact information in a separate location to the main study data.

Support for research participants

What action is proposed if sensitive issues are raised or a participant becomes upset?

If a participant becomes sensitive, I will be calm and use my intuition to deal with the situation, stepping out of the research role.

Integrity

How will you ensure that your research and its reporting are honest, fair and respectful to others?

All the data will be presented fairly and I will avoid disparaging comments. During conducting my study, I will behave in a manner that inspires trust and confidence. The collected data will not be misrepresented.

After collecting the interview and observation data, I will consult with my supervisor or ask a colleague to peer review the findings.

What agreement has been made for the attribution of authorship by yourself and your supervisor(s) of any reports or publications?

I will follow the department guidelines.

Other issues

Please specify other issues not discussed above, if any, and how you will address them.

Signed:

Student: Akmarzhan Nogai Bayeva



Date: 17/10/2018

Supervisor: Michael Hammond

Date: 7 October 2016

Please submit this form to the Research Office (Donna Jay, Room B1.43)

Use these only:

Action taken:

- Approved
- Approved with modification or conditions – see below
- Action deferred. Please supply additional information or clarification – see below

Name:

Signature:

Date:

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L. W. S. S. Form
[Signature]
18*

4/10/16

Stamped:

Studies

Notes of Action:

Appendix B: Questionnaire schedule

Research Title: How and why do Language teachers use/not use ICT (Information and Communication Technology) in teaching and learning at a University in Kazakhstan?

Section1: Please, tick the appropriate answer to the following questions.

1. Questions about you.

Your gender	
male	
female	

Age	
25-35 or under	
36-50	
50-above	

Teaching specialism	
Kazakh language	
Russian language	
English language	

Years of teaching experience	
0-10	
11-20	
21-or more	

Please, respond to the following statements.

About your ICT and using ICT.	Yes	no
a. Do you have a personal computer? (e.g. laptop, iPad, stand-alone computer)		
b. Have you ever attended any long CPD (Continuing Professional Development) courses on using ICT for teaching and learning? (e.g. a		

week, a month programme.)		
c. Have you ever attended any short CPD courses on using ICT for teaching and learning? (e.g. an hour or two workshops.)		

Which best fits you, please, fill in numbers.

Less confident-1, fairly confident-2, very confident-3

ICT skills	1	2	3
a. I am reluctant user of ICT. I find it difficult to use ICT in my teaching.			
b. I have good ICT skills and I am reasonably confident to use packages, software in teaching			
c. I am a confident user of ICT and I am often looking for ways to use ICT in my teaching.			

How often do you use ICT in teaching and learning?

To what extent do you agree or disagree with the following statements:

ICT use	never	rarely	sometimes	often	always
a. I prepare lessons with the help of ICT					
b. I use Internet to prepare my resources					
c. I use Power Point or other presentation software in my lessons.					
d. I use the Intranet (in some universities there is also a portal "Intranet") to send course information to students.					
e. I use a mobile phone to contact students about lesson issues.					
f. I send and receive students' work by email.					
g. I use the CD-ROM that comes					

with the text-book in class.					
h. I ask students to use CD-ROM at home.					
i. I use IWB (Interactive White Board) in lessons.					
j. I recommend students to use testing and revision online resources. (e.g. quizzes, presentations)					
k. I encourage students' ICT use out of class (e.g. discussion forums, blogs, wikis)					

To what extent do you agree or disagree with the following statements:

Attitudes to use ICT	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
a. I do have enough time to learn to use ICT					
b. to use ICT in class takes a lot of time					
c. I am expected to use ICT in teaching					
d. I would like to use ICT more in my teaching					
e. my teaching is more interactive using ICT					
f. ICT enables my students to be more engaged					
g. ICT distracts students					
h. ICT helps my lessons to be more student centered					

Section 3. Please, tick the appropriate answer to the following questions:

2. About your Institution and your department regarding access to ICT.

Access to ICT	Yes	no
a. I have a computer in my office.		
b. There is usually no computers in my teaching room		
c. In my teaching room I usually have a single computer.		
d. Teaching rooms usually have set of computers.		
e. All the teaching rooms have access to the Internet.		
g. I have access to computer support when I need it.		
h. It is difficult to book ICT equipment for language learning and teaching.		

Section 4. To what extent do you agree or disagree with the following statements:

1. System level questions.

Questions out of institution	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
c. Beyond my institution there is little government backing for use of ICT in language teaching and learning.					
d. I cannot use ICT following the present curriculum.					
e. ICT has led to big changes in the way language teachers teach languages.					

Thank you for your time and participation.

Could you please write your details here if you are willing to participate in the interview stage of my research?

Full name	
Tel. contact number	
email	

If you have any further questions regarding the questionnaire or the study, please do not hesitate to contact to: A.Nogaibayeva@warwick.ac.uk

Appendix C: Interview Schedule

Interview schedule for language teachers

Pre-Interview:

Introduction

Description of purpose of interview and ethical considerations

Setting out the scene

Question for warming up

General information:

1. Could you please, tell me a little more about your professional experiences, particularly about your working experience in your current department? (qualification, background)
2. How do you find your work? Is it demanding? Do you get time to do things outside work? Are you satisfied with your work-life balance?
3. How long have you been a language teacher? What led you to take this career path? What have been the satisfactions /difficulties?
4. Which courses do you teach? How do you think students get on in your courses? Do they find the courses interesting and relevant? How do you feel about the syllabus you work to? Do you think that the existing curriculum meets the needs of students - to what degree /what are the strengths and areas to develop?

ICT use:

In relation to ICT use,

1. Do you use ICT very often?
2. Can you tell me about ways in which you use ICT for preparing teaching? (Prompts: do you use the Internet in preparing lessons, tell me about the PPTs you produce, book CD, search authentic material)
 - Can you tell me what technology you use the most?
3. Do you use it yourself very much, for research, for personal use.
4. Tell me about ICT in your teaching. (how did you use it, where did you use it, did it help/did it not help, why and why not)

● Blogs

● Social Networks (facebook)

● Google groups

- Email
 - Presentations text media links
 - IWB – at what level
 - SMS.
 - Electronic dictionaries
 - Audio tapes
 - www to access authentic material
 - www to access native speakers
5. Who (or what) if anyone encourages(motivates) you to use ICT (prompts: teachers, university, training providers, students etc.)? was your first intention of using?
 6. Do you still remember the first technology you used in teaching?
 - What was it?
 - How did you use it?
 7. Thinking about the present, what technologies do you use the most in teaching? how do you usually use them?
 8. Could you tell me any particular lesson in which you use ICT more? Can you tell me why?
 9. As a language teacher, do you think ICT is important or may be particularly useful for you in teaching?
 - Can you tell me in what way?
 - Why do you think so?
 - How about the idea that ICT can help students' self-learning, do you agree with that? Why?
 - Do you think that ICT supports student-centered learning?
 10. Have you felt your experiences of using in ICT have been successful? Can you think of any that have been particularly successful?
 - How do you feel about that?
 - Are you encouraged to use ICT more after experiencing it?
- MICRO constraints:

Constraints:

1. What do you believe is preventing you from ICT use? (Prompts do not see the point, lack of skills, lack of confidence, fear of failure.)

2. During teaching, do you experience any difficulties in using ICT?
 - If Yes, can you tell me about them? then, how do you deal with a difficulty?
 - (If No, why do you think so?)
3. Do you think that you have the ICT skills to use ICT? Is this important?
4. Could you please share with me your concerns about Language teachers` use of ICT?

(the motivation, pedagogical beliefs, rationality of ICT in teaching)

Meso Level questions:

ACCESS:

Concerning provision of technology in this institution,

1. Could you please describe some of ICT at your university?
2. Are you satisfied with technological resources and access provided by your institution/department?
 - Why?
 - Is there anything you think should be improved? What is it?
3. Do you think that ICT resources condition support you in teaching?
 - If the ICT resources is poor, do you still try to use ICT in teaching? How?
4. If the ICT resources and access were enhanced, would it encourage you to use ICT more?
 - If No, Why?

In relation departmental policy

5. Could you explain to me where do overall course plans come from?
6. Where do your schemes of work come from?
7. How do you take these overall goals into schemes of work?
8. Who participates in the scheme of work?
9. To what extend do teachers expect to teach with the scheme of work?
10. Is there any policy that says teachers should use ICT in teaching? Can you tell me about any encouragement to use ICT either officially or unofficially?
11. Who makes the policy? Do you have a say in it? How strict is the policy? How much freedom do you feel you have to teach what and how you like?
12. In relation to teaching evaluation, does your leader evaluate your teaching performance?
 - How often is this?
 - If you look back to your last teaching evaluation, were there any questions mentioning ICT use or integration in teaching?

Training

About CPD (for example, workshop, training (long term, short term), conference (online courses))

Have you had any training in the use of ICT? When, where, for how long?

11. Does your institution/ department provide you with opportunities for professional development?
 - Can you give me about the examples?
 - (Is it about language teaching or ICT use in teaching?)
 - How often is it (in a semester or a year)?
 - Are you expected to use what you learn in your teaching?
12. How about professional development or trainings or workshop outside the institution?
 - Have you attended or joined some of them?
 - Can you tell me what they covered?
13. How about online courses for technology-enhanced learning?
 - Have you joined any?
 - If you have, why were you interested in joining that? Were you invited by your colleagues (perhaps), or is it by your own intention?
 - If No, are you not interested in it?
14. Was there any change you made in your teaching after the training?
 - (If Yes, can you give me the examples?)
 - If No, why doesn't it affect you?)

MESO environment:

Thinking about your daily communication with your colleagues,

15. When you talk informally with colleagues, do you discuss share any experiences with about teaching languages?
 - How about discussion of successful experiences in ICT use?
 - Do your colleagues share with their successful experiences by conducting workshops within the department?
16. Are you interested in or encouraged to implement what you have learnt from your colleagues in your teaching?

Workload

Then, about your workload,

17. Tell me your work.

- Is it only teaching?
- If No, what else do you do?

18. How much teaching do you do, how much time doing other things such as administration or other tasks?

19. Do you think that the amount of workload assigned to you affects your teaching performance? Does it also affect your use of ICT?

MESO constraints:

20. Do you find it difficult to get technical support when you need it?

21. Do you think that it is easy to use ICT in the schemes of work you follow?

22. Do you think that there is enough time in the lesson to use ICT?

23. Do you believe that the university encourages, discourages you to use ICT?

24. Do you find the workload difficult to manage or is it manageable?

25. Would you like to comment further?

MACRO level questions

26. Do you think your students are ICT active users? (at home, after lessons)

- Do you encourage them to use ICT outside the class
- Are they personally facilitated with technology? (e.g. smart phones, laptop)

27. Can you describe your students' responses when you use ICT? What do they like using / not like using?

- Is there any difference or not on their responses?
- Can you tell me your view why the students' respond so?

28. Do you think ICT has changed the way the LT teach? How?

- What do you think about these changes?
- How are people talking about technology these days? (for examples the students, youngsters, or parents)

Macro level constraints

29. What are some obstacles that university still faces in relation to ICT integration?

30. How do you see ICT going in the University? Are staff general able to integrate ICT?

31. What are the needs, institutional needs regarding ICT?

32. Has the promotion of ICT been a good thing?; Would you like to comment further?

33.

It has been a pleasure speaking to you about your views and teaching experience in ICT use. Is there anything else that we have not covered and you would like to tell me about. I would say thank you very much for your time you gave me for the interview.

Appendix D: Interview Schedule

Interview schedule for Head of Departments

Researcher: AkmarzhanNogaibayeva

Affiliation: University of Warwick

Centre for Education Studies

United Kingdom

Email: A.Nogaibayeva@warwick.ac.uk

Dear....

Head of the department

- Introduction
- Description of interview objectives and ethical considerations

Beginning of interview

I am carrying out a research into ICT (Information and Communication Technology) use among language teachers in Kazakhstan Higher Education and I am asking if you could help me with my research by taking part in the interview. This interview asks about your teaching background and your use/non-use of ICT. The interview will take about 15 min. All data will remain confidential and anonymous.

AkmarzhanNogaibayeva, University of Warwick, Centre for Education Studies

A.Nogaibayeva@warwick.ac.uk

Personal background

1. Can you tell me about your role?
2. How long you have been doing it? As the head of department?
3. During your leadership period, can you tell me any challenge have you experienced in the department? (e.g. attempts to amend the policy?)

In relation to the department curriculum

1. Could you explain to me where do overall course plans come from?
2. Where do your schemes of work come from?
3. How do you take these overall goals into schemes of work?
4. Who participates in the scheme of work?
5. To what extend do teachers expect to teach with the scheme of work?

6. Can you tell me about the curriculum in the LT?
 - Who develops it? (Is it centred from the university or department autonomy?)
7. How is the procedure in curriculum development? In the LT curriculum, is there policy to obligate teachers to use ICT in teaching? (If Yes, why is it necessary? If No, why?)

ICT use in teaching

1. Your own ideas about ICT? Thoughts about ICT in LT
2. how does university decide or purchase appropriate technologies for language teaching and learning?
3. In your views, do you think that teachers should use ICT in teaching?
4. According to your (experience, observation, knowledge you gain during your leadership position) are there any variation in level of ICT use among LT?
 - If yes, on what bases?
5. What do you think about teachers' workload? Does it influence on their performance in teaching? And ICT use in teaching?
6. In your opinion do teachers do similar lessons or do they do different lessons? Why is ICT being promoted?

MESO environment

Can you tell me about how much LT use ICT in teaching here?

7. Could you please what ICT you have at your university?
 - Are there people who use it a lot / a little?
 - What kinds of things do they do?
8. What do you think in this dept the language teachers your dept think about ICT?
 - How are insights about the use of ICT spread among LT?
9. Are there any variations between departments, in terms of ICT infrastructure?

Encouragement

10. Could you provide any information on ICT training and CPD at your university (standards, levels of training, periods, content of training, problems of training)
11. Is there any other institution working in collaboration that provide training to teachers?
12. What kinds of things do you do at the department to encourage teachers to use ICT in LT and L
13. What kind of CPD is offered?
 - Do you think it works?
 - Are there informal ways of supporting each other

8. Is there any training focusing on ICT use in teaching?
 - If Yes, how often is it? What is the materials focus? Who delivers the materials?
 - If No, why?
 - What works (not so well)
9. Do you think that budget is one of constrains to carry out CPD for teachers?
10. Are all teachers expected to attend training courses?
11. Are they expected to be evaluated after they have done CPD?
12. Do Uni or department provide choice of courses like online and face-to-face for teachers convenience? (personalised courses)

About the teachers' evaluation

13. Can you tell me how many times in a year the teacher is evaluated?
 - What aspects are evaluated?
 - Is there an aspect about ICT use?
14. According to your observation, do you think that the evaluation result is effective to encourage teachers to enhance in teaching performance?

ICT Access and support

Concerning the ICT resources,

15. Do you think that the ICT access and resources are adequate to support teachers and learning?
16. In your views, what should be improved?

Benefits

17. Why do you think the university supports the use of ICT in LT and L?
18. Do you think ICT is influencing language teaching and learning or not?

Obstacles

19. What are some obstacles that university still faces in relation to ICT integration?
 - Could you please share with me your concerns about teachers' use of ICT? (the motivation, pedagogical beliefs, rationality of ICT in teaching)

The future

20. How do you see ICT going in the University?
 - Are staff general able to integrate ICT?

- What are the needs, institutional needs regarding ICT?
- Has the promotion of ICT been a good thing?
- Would you like to comment further?

Macro level

21. Do you think that government/university/administration/ department provide backing or support to facilitate and enhance the use of ICT by LT?
 - If yes, what type of backing, support, and facilities?
22. Is there any other institution that provide some support?

Appendix E: Interview Schedule

Interview schedule for IT support

IT Staff

- Introduction
- Description of interview objectives and ethical considerations

Personal Background

About your working experience.

1. Can you tell me what does your work involve? What IT programs does your department have?
2. How many people do you have at the IT department?
 - What are their IT tasks?
 - Does IT department provide training to teachers?
 - What technologies do you have to support teaching and learning?

Concerning the ICT,

3. Do you think that the teachers have satisfactory ICT access and ICT support?
4. In your views, can IT department provide teachers with up-to-date technologies for teaching and learning?
5. How do you think what should be improved in terms of support, access, training?
6. How about the Intranet System, when did university start using Intranet?
 - do all teachers use it?
 - If No, Why? Do you think it is important for the university to have it?
 - What have changed since then?
7. In your view, do you think that government/university/administration provide backing or support to facilitate or enhance use of ICT?
 - If yes, what type of backing?
8. What supports do IT staff provide to teaching and learning enhancement?
 - Can you tell me the examples?

- Are there any problems in the support?
 - What are they?
 - How do you deal with them?
9. In your views, is it important for teachers to use ICT in teaching?
Why?
 10. What do you suggest to teachers in relation to their ICT use?
What IT skills should they need to have?

Appendix F: Observation Schedule

Observation data was designed using an open schedule, allowing flexibility in recording teacher use (or non-use) of technology

Name of the teacher	Class description: (time, number of students.)	Teacher actions	What are learners doing (student role)	Tools used: (environment, application used)	Mode of interaction:	Discussion of content:	Collaborative engagement

Individual tasks:	Facilitator of information:	Provided access to material:	Supplied material:	Directed students learning:	Use of technology	Communication:	Presentation:

Appendix G: Open Codes

1. better balance
2. better ICT in private
3. better in foreign Institute
4. better now compared to past
5. book publisher
6. bureaucracy
7. career goal
8. Central scheme of work
9. centralized syllabus control
10. change is needed
11. Influence of children to ICT use
12. commitment to teaching motivates ICT use
13. comparing with otheruni
14. competent ICT skills
15. competent teacher of KZ
16. conditions not suitable
17. conference attendance
18. continuous self development
19. CPD better at private
20. CPD involved assessment at private
21. CPD is better at private
22. CPD is not serious at KAZNu
23. Culture of KzNU
24. curriculum change rapid
25. curriculum design
26. devoted profession
27. DID online training
28. Drawbacks of ICT for learner centeredness
29. dream job
30. English is a barrier
31. equipped classroom needs booking
32. Feedback from students
33. flexible at private UNI
34. Government promoted KZ
35. Government backing to ICT
36. government promotes 3 stream education
37. Government supports KZLT

38. happy life
39. ICT distracts
40. ICT enhances learning
41. ICT for lesson preparation
42. ICT is accessible at the department
43. ICT is not time consuming
44. ICT is only in theory
45. ICT makes learning interesting
46. ICT motivates learners
47. ICT skills are important for LT
48. ICT supports self-learning
49. ICT training from other org
50. ICT use is assessed
51. importance of learning L
52. inflexible at KazNU
53. International collaboration
54. International experiences
55. institution not responsive
56. Is higher user of ICT
57. KazNu growing
58. KazNU supports Gov program
59. Knowledge share
60. KZ books do not support ICT
61. Shortage Internet resources
62. KZL teaching is improving
63. lack of ICT in classes
64. lack of Internet resources
65. lack of resources
66. learners have short memory
67. less paid job
68. lesson prep takes time
69. lesson timing
70. likes
71. long lectures are boring
72. loose time
73. low interest to learn KZ
74. makes varied syllabus
75. managing time efficiently
76. medium ICT user
77. mixed level in class
78. new KZ books for school support ICT

79. new KZ books is content based
80. no control from department to ICT use
81. no reward
82. no support
83. no support (2)
84. no training
85. no use of sharing knowledge
86. old books focused on grammar
87. online seminars
88. Open to new ICT advances
89. another Inst better
90. other ambitions
91. outlook is used between departments
92. over controlled but no backing
93. Parents not involved
94. persuaded to teach
95. Plagiarizing problems
96. Positive about ICT
97. pragmatic teacher
98. pre-preparation for lessons
99. relevant, meets student needs
100. respected among colleagues
101. reward
102. role example
103. sate Uni lack of resources
104. seeing impact of teaching
105. self-encouraged to use ICT
106. self-image
107. self image (2)
108. Status of KZ during soviet time
109. student awareness of marking criteria
110. student context impacts teaching
111. students do presentation
112. students impact to ICT use
113. students interest to study
114. students liked SN in teaching
115. students positive reaction to ICT
116. Students` need to be controlled to use Internet
117. Support does not come immediate
118. support peer learning
119. Supports ICT use after class

120. supports student ICT use during the lesson
121. syllabus aim
122. syllabus design
123. syllabus gap
124. teachers competent to use ICT
125. teachers involvement in social activities
126. teachers` responsibility to engage
127. teaching approaches variety
128. technology makes change in the curriculum
129. Technology use of teachers is assessed twice with teachers and students
130. trigger questions
131. unaware of government backing
132. undeveloped KZ curriculum
133. uneven provision
134. Uni is responsive
135. Uni online platform UNiver
136. Uni promotes commercialize education
137. use SN
138. uses chat group with students
139. uses email to contact students
140. valuable job
141. Varied ICT use
142. was high user of ICT
143. working with young people

Appendix H: Coding categories

High ICT use	Medium ICT use	Pedagogy	Status of KZL	Teaching satisfaction
1.competent ICT skills 2.Is higher user of ICT 3.Open to new ICT advances 4.self -encouraged to use ICT 5.Supports ICT use after class 6.supports student ICT use during the lesson 7.use SN 8.uses chat group with students 9.uses email to contact students 10.Varied ICT use 11.was high user of ICT	1.I use for listening purposes 3-4 times in term	1.book publisher 2.DID online training 3.Knowledge share 4.learners have short memory 5.lesson prep takes time 6.lesson timing makes varied syllabus 7.old books focused on grammar 8.pre-preparation for lessons 9.student awareness of marking criteria 10.support peer learning 11.teachers` responsibility to engage 12.teaching approaches variety 13.trigger questions	1.English is a barrier 2.Government supports KZLT 3.KZL teaching is improving 4.low interest to learn KZ 5.Status of KZ during soviet time	1.better now compared to past 2.conference attendance 3.International experiences 4.managing time efficiently 5.new KZ books is content based 6.pragmatic teacher 7.respected among colleagues 8.self-image (2) 9.Uni is responsive

Teaching dissatisfaction	Teaching profession and Motivation to teach	Value of ICT	Government backing
1.assessment creates tension 2.balance of workload is good at private 3.better ICT in private 4.bureaucracy 5.better in foreign Institute	1.better balance 2.caree goal 3.compitent teacher of KZ 4.battling with Soviet heritage	1.ICT makes learning interesting 2.ICT motivates learners 3.ICT skills are important for LT 4.ICT supports self-	1.Goverenment promoted KZ 2.Government backing to ICT 3.government promotes 3 stream education

6.comparing with otheruni 7.CPD is better at private 8.CPD better at private 8.CPD involved assessment at private 9.lack of resources 10.less paid job 11.long lectures are boring 12.mixed level in class 13.no reward 14.no training 15.no use of sharing knowledge 16.other Inst better 17.teachers' involvement in social activities	5.continuiuos self-development 6.devoted profession 7.dream job 8.happy life 9.importance of learning L likes 10.persuaded to teach 11.other ambitions 12.seeing impact of teaching 13.self-image 14.students' interest to study 15.valuable job 16.working with young people	learning	4.unaware of government backing
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Culture of KazNU	Curriculum gap	Curriculum improvement	Discouraging ICT use	Encouraging ICT use
1.30 credit hours of teaching at KAZnu 2.adaptation to KAZnu was difficult 3.Uni needs autonomy 4.belonging to KAZNU 5.Central scheme of work 6.centralized syllabus control 7.Culture of KzNU 8.CPD is not serious at KAZNu 9.inflexible at KazNU 10.International collaboration 11.KazNu growing 12.KazNU supports Gov program 13.sate Uni lack of resources 14.Parents not involved 15.over controlled but	1.flexible at private UNI 2.syllabus gap 3.undeveloped KZ curriculum	1.curreculum change rapid 2.curreculum design 3.relevant, meets student needs 4.syllabus aim 5.syllabus design 6.technology makes change in the curriculum	1.change is needed 2.conditions not suitable 3.Drawbacks of ICT for learner centeredness 4.equipped classroom needs booking 5.ICT distracts 6.intsituation not responsive 7.ICT is only in theory 8.KZ books do not support ICT 9.lack of ICT in classes 10.lack of Internet resources 11.loose time 12.new KZ	1.advantage of technology 2.age is not obstacle to ICT use 3.commitment to teaching motivates ICT use 4.Feedback from students 5.ICT enhances learning 6.ICT for lesson preparation 7.ICT is accessible at the department 8.ICT is not time consuming 9.ICT training from other org 10.ICT use is assessed 11.Influence of children to ICT use 11.online seminars 12.outlook is used between

<p>no backing 16.student context impacts teaching 17.teachers competent to use ICT 18.Uni promotes commercialize education</p>			<p>books for school support ICT 13.no control from department to ICT use 14.no support no support (2) 15.Plagiorizing problems 16.Shortage Internet resources 17.Support does not come immediate 18.uneven provision</p>	<p>departments 13.Positive about ICT 14.reward 15.Role example students do presentation 16.students impacts to ICT use 17.students liked SN in teaching 18.Students` need to be controlled to use Internet 19.students positive reaction to ICT 20.Technology use of teachers is assessed twice wit teachers and students</p>
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