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**ESTONIAN ENGLISH LANGUAGE TEACHERS' ATTITUDES TOWARDS THE USE  
OF INFORMATION AND COMMUNICATION TECHNOLOGY IN SECONDARY  
SCHOOL**

**MA Thesis**

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## **ABSTRACT**

Information and communication technology (ICT) is being actively incorporated into education both in Estonia and abroad. It brings about rapid changes that affect both pupils and school staff, as they need to adapt to the new environment. Often teachers' opinions in the matter are left aside in favor of keeping up with the regulations in the national curriculum. This study focuses on the attitudes and experiences of language teachers of Estonian secondary schools to highlight the strengths and shortcomings of the current system.

The first part of the thesis gives an overview of the use of ICT in language classrooms and introduces existing research done in the field, both in Estonia and abroad. Additionally, it explains the main barriers to the effective use of ICT in language classrooms. The empirical half of the thesis introduces the data collected via semi-structured interviews, discusses said data using the content analysis method and draws conclusions based on previous works. The interviews were conducted with 15 English language teachers from both public and private schools.

The findings of this thesis suggest that teachers' main fears regarding ICT are connected to their training in the field and the quality of technology in schools. At the same time, teachers believe that ICT is a great tool for increasing student motivation and activeness. Training courses organized outside of schools need more work according to teachers – many of them take place during school hours and are costly for teachers. Furthermore, the content of these courses is often too ambiguous and the pace too fast. Teachers expect a more supportive and reliable environment in which to practice ICT-based language teaching.

## **INTRODUCTION**

A large portion of information and various services have been digitalized in the last couple of decades. Technology is used for everything from making transactions and controlling our homes to keeping ourselves updated with the world and communicating with others. Information and communication technology (ICT) is also increasingly used in education. With its endless possibilities and constantly updated content it is the perfect tool to aid students with self-discovery and learning. Moreover, introducing children to ICT at an early age can help ensure that they are well prepared for a life in the technology-driven society.

Teachers are no longer tasked with just mediating knowledge of their subject to their students. Nowadays they also have to educate students on how to navigate the Internet, how to look for valuable information and how to use the knowledge of ICT to better understand school subjects. This puts a tremendous amount of pressure on teachers, as they need to be proficient not only in their subject, but also various ICT tools and solutions. It is important to understand how this new type of stress affects the teachers' work, as possible unsolved issues may lead to an ineffective learning environment.

According to law (Government of Estonia 2011) Estonian students are expected to be taught topics of science and technology in almost all stages of education, so it can be assumed that integrating ICT into an everyday classroom setting is of significant importance. While the progression towards a more technology-oriented education can generally be described as a positive phenomenon (Laanpere 2015; HITSA 2014), there is a large group of people who are greatly affected by these processes and yet their interests in and attitudes towards the matter are mostly overlooked – teachers. Only one report has studied Estonian teachers' attitudes towards ICT (Luik 2012). However, this report was conducted five years ago and much can change in terms of technology in that time. Numerous studies on the topic have been conducted abroad

(Gilakjani et al. 2015; Deaney et al. 2006; Ruthven et al. 2004; Zhang and Martinovix 2008), but results vary from region to region. Therefore, a new study is needed to fill the gap regarding Estonian teachers' attitudes towards ICT.

Blurton (1999: 46) defines information and communication technology as “a diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information”. Although 18 years old, and with an emphasis on communicating and creating information, this term could be suitable for this thesis.

A more recent definition of ICT in education comes from Lloyd (2005), who deduces that ICT is how people use the technological tools to communicate, not just the tools themselves. It is the process of information management that is implemented through ICT tools such as computers. Lloyd's definition should be considered a complementary addition to Blurton's, as it helps tackle the definition of ICT from a broader, more communication-centered perspective, not just considering the various computers that in Blurton's definition could constitute the whole meaning of ICT.

The term Computer-Assisted Language Learning (CALL) could also be used to describe using technology in educational context. CALL is defined as “the search for and study of applications of the computer in language teaching and learning“ (Levy 1997: 1). The problem with CALL arises when it is compared with the teachers' idea of ICT. Even for language teachers, technological tools are not merely a means to teach the language, but rather to create meaningful content, liven the classes and exchange information (Ruthven 2004). In other words, teachers seldom use technology in their classes to teach the language alone. Therefore “CALL” as a term cannot be used alone, but it can add a layer of meaning to the definition of ICT in this thesis.

ICT can thus be defined as a set of information mediating tools, both hardware and software, preferably with access to the Internet, through which teachers and students then work together to “communicate, and to create, disseminate, store, and manage information” (Blurton 1999: 46). How ICT is used is just as important as the technological devices that carry it. ICT is not limited to the classroom alone, but is rather a dynamic and mobile tool that students and teachers can access from different places, at any time. Finally, using ICT in language classes does not limit it to teaching language and nothing else. Instead, ICT can be used to either compliment language learning or practice other skills, such as cooperation, searching and synthesizing information or problem solving.

The thesis at hand gives an overview of the attitudes of language teachers in Estonian schools towards the integration of ICT into language classrooms. The paper analyzes teachers’ fears and hopes regarding the use of ICT, as well as their evaluation of their training and readiness to perform this type of tasks, and their suggestions for possible improvements. Teachers’ attitudes are analyzed from four different aspects and the thesis answers the following questions:

1. What are teachers’ fears regarding ICT? How are they manifested?
2. How do teachers evaluate their training and skills concerning ICT?
3. What do teachers regard as positive about ICT?
4. How much and what kind of support do teachers receive from their schools regarding ICT?

The thesis is divided into two main chapters. The first half of the thesis, which makes up the theoretical part, includes background research about the benefits of using technology in classrooms as well as reasons for teachers’ negative attitudes towards ICT and gives an overview

of existing research that has been done both abroad and in Estonia. The empirical part, which makes up the second half of the thesis, begins with overview of the informants and methodology. 15 semi-structured interviews were carried out with teachers of English. The respondents were all female, from different age groups and most of them were employed at public town schools. While the length of employment varied greatly, all the respondents had recent experience teaching in middle school. The interviews, which lasted between 15-35 minutes, were transcribed and content analysis method was applied to gather meaningful and relevant data. The overview of the method of research is followed by the presentation and analysis of the results and the conclusion with the author's suggestions for future research and improvements in the field of education and ICT.

## **1. LITERATURE REVIEW**

### **1.1 SIGNIFICANCE OF ICT IN SCHOOLS**

Most aspects of people's everyday lives have been digitalized to some degree in the past couple of decades. The swift transition from paper to digital screen, from binders to clouds has urged societies to move forward with the introduction of technology in every field, including education. In Estonia, teachers no longer use a class register or file their study materials in binders under the desk. Instead, they use platforms like Stuudium, TERA, eKool, Moodle and various cloud applications (HITSA 2014: 40). The national curriculum urges schools to incorporate ICT in as many fields as possible to improve the students' technological competence and bring variety and change to the educational system (Government of Estonia 2011). This section of the thesis discusses how ICT is significant in education in three aspects: preparation for adulthood, increasing motivation and improving language learning results.

#### **1.1.1. Preparation for adulthood**

First and foremost, along with assisting in subject learning, the purpose of using technology in teaching in general should be to prepare students for the technology-driven society they will enter after finishing school. Bingimlas (2009) argues that introducing contemporary ICT tools to learners in classrooms "is essential for providing opportunities for students to learn to operate in an information age." (Bingimlas 2009: 236) His view is supported by Yelland (2001) and Bransford et al. (2000), who add that schools that do not support ICT-based learning are not properly equipping their students with the competencies for the expectations of contemporary workplaces. Furthermore, digitally competent citizens can improve not only their own quality of life, but that of their society.

Norris (2001: 2) suggests that moderately developed countries, including Estonia, may be able to catch up to the post-industrial nations in their development with the help of ICT. ICT

provides a cheap and effective means of communication and access to information that would otherwise be hard to obtain and apply. Among other things, it enhances global trade for small companies, makes basic education and health information more accessible and helps communicate small nations' concerns to the international public. There are countless arguments supporting the promotion of ICT in small and developing nations.

According to Norris (2001), people who have access to these information media can thrive and contribute to society, while those with no access or know-how may become marginalized. While Ohu (2013: 5) states that in Estonia marginalization is becoming less and less of an issue due to good nationwide network coverage, access to information should always be complimented by the knowledge of how to analyze and process it, especially considering the amount of "noise" and the number of ill-willing people on the Internet. Pauwels, Lobet-Maris, Pouillet and Walrave (2008) suggest that without the know-how, even those with access to communication technology may be unable to use it correctly, potentially harming themselves and others.

According to a survey conducted in Belgium in 2008, many teenagers give personal information to strangers they have only met online and almost a third of the participants confessed to putting up or sending pictures to strangers who ask for it (Pauwels 2008: 9). Almost half of the respondents said they would give out their e-mail address and a quarter admitted to giving their telephone number to online acquaintances (ibid.). Most of the teenagers that participated in the survey were familiar with the possible threats on the Internet, but as the results show, many participants did not seem to those threats them seriously. This could lead to serious issues with identity theft, burglary, harassment and other forms of harm to unknowing Internet users and their families. Educating students on how to behave online and guard their information

and identity is crucial to ensure their safety. In fact, 60% of the same teenagers who participated in the survey proposed “more education on the dangers of the Internet” as a possible solution to the problem (ibid.: 10), but only 17% said that they receive preventive warning against the Internet from their teachers, friends or older brothers or sisters (ibid.: 11).

In conclusion, integrating ICT into education can help students prepare for a successful and independent life in a technology-based society. People with a higher ICT-literacy perform better in the labor market and social interactions. Thanks to their insight and know-how, they may feel more inclined to contribute to the society than they otherwise would and get access to important information on relevant topics. Most importantly, however, people who understand and know how to use ICT can protect themselves and their assets from harm and prevent becoming a victim of scams, thefts or harassment.

### **1.1.2. Increasing motivation**

In terms of incentive, motivation is divided into two: intrinsic, or internal and extrinsic, or external (Weiner 2010). While in learning, intrinsic motivation is more desirable, as internally motivated people may prove to be more successful in achieving their goals (Atkinson 1964), external motivation or goal-oriented learning is often more common in schools. Mullamaa (2010: 38) says, “Intrinsic motivation is often attributed to finding a value in what students do.” The goal of every teacher should be to try and raise the intrinsic motivation of their students. Using tools like ICT may help find this value and increase the students’ internal motivation to learn through meaningful, valuable media.

As students are accustomed to using information technology daily, traditional methods of teaching may fail to motivate them to learn, especially if it is the teacher’s aim to restrict the use of ICT on principle (Ghaznavi et al. 2011: 117). Teachers should instead adopt a positive attitude towards ICT as a tool for increasing student motivation and make themselves acquainted with the

possibilities it offers.

In 2011, a study (Ghaznavi et al. 2011) was carried out in Iran to determine whether using ICT in classrooms has a positive effect on learning outcomes. The authors analyzed four different aspects of learning success: motivation, question-forming skills, research spirit and curricular scores. A total of 320 students from 32 different schools in Khash city participated in the survey. The participants were asked to fill in a 24-question questionnaire, which was then analyzed using the “measurement type” method of data analysis (ibid.: 110) The researchers argue that thanks to ICT, learning is less bound by space, time and amount of information than ever before and when teachers implement ICT in their classroom, they help expand the students’ idea of the world and guide them in independent learning (ibid.: 116). Self-initiative in learning is a property of intrinsic motivation. The researchers continue that due to this, learning is becoming increasingly more student-oriented and personal, where each student can learn through topics that are meaningful to them.

Ghaznavi and others (2011) also propose that the lack of restrictions that are common to the traditional method of teaching means that there is a lot more variety in learning opportunities. Students can be more involved in different activities such as interactive games, projects, mind maps and other. As these programs are not restricted by the limits of the classrooms, being often updated in real time via the Internet, students are more likely to work with them outside of school and can even keep themselves updated with the activities of the rest of the class when they are absent. This shows that ICT has a clear positive impact on students’ motivation (ibid.: 120).

Teachers can also track students’ work in shared documents and projects, highlight certain issues, give comments and suggestions, all without separating the student from their

work. Gregory and Kaufeldt (2015) add that it is very important not to give the student immediate answers or do the work for them, as this can lead to “learned helplessness”. Instead, teachers should act as guides to keep the student on the right track and make their own discoveries, correcting their own mistakes. Programs and apps should also be designed with that in mind – instead of providing an easily accessible key, it should bring the students’ attention back to the issue and encourage them to try again.

Finally, students can expect immediate feedback to their progress, either from the teacher or from the learning tools. Gregory and Kaufeldt (2015) explain that the current generation, born into a world of technology, is a so-called “now-generation”. This means that they expect immediate results and may feel disappointed and ready to give up after the first failure. Immediate gratification and feedback are crucial to keep the students motivated and at their tasks. Learning vocabulary with a designated application or game can give a quick response to errors and correct answers, as well as give an overview of students’ progress in easily understandable data, such as percentage or other grading systems (ibid.). It can also lead the students back to their most common mistakes to ensure that they practice certain constructs for as long as needed.

### **1.1.3. Improving language learning results**

While motivation and preparation for adulthood are important, what schools and teachers have to keep in mind when choosing teaching methods is their effectiveness in helping students learn the target subject. Using ICT is not a goal but rather a means to an end and its effectiveness as a tool should be critically evaluated.

In the study by Ghaznavi and others (2011), researchers focused not only on ICT’s effect on motivation but actual learning results and scores as well. They used the survey method to determine the respondents’ (secondary school students) experience with how ICT affects their

academic scores. The study concluded that the students felt that ICT influenced their learning outcomes, whereas most reported it to be “high” (over half) or “very high” and none had opted for the “low” or “very low” answer (ibid.: 124). While this study is somewhat subjective, it implies that, at the very least, students find some support in using ICT tools when learning.

ICT can be used to teach various language skills. For example, a study conducted in Iran by Bhatti (2013) analyzed whether and how much using Computer Assisted Language Learning (CALL) can affect the development of reading skills. Two groups of ninth-graders, each comprised of 30 students were taught reading skills, whereas one group used CALL and the other (the control group) used a traditional method of instructor-led lesson. The results showed that while both groups showed improvement, “the experimental group improved more than 35% than the control group” (ibid.: 5). Although the study did not focus on the pace of improvements, it discussed that the phenomenon may be due to the “self-paced” and “motivating” nature of CALL. Students in the experimental group showed improved self-confidence, which led to higher motivation and, in the end, better and faster results.

Houcine (2011) contributes to this by stating that with ICT, learning materials can be adapted to the learners’ individual levels and needs as well as to the circumstances more easily. However, Houcine (2011) finds this to be an obvious piece of common knowledge and does not discuss the matter further. Ohu (2013: 23), who analyzes Houcine’s work in his thesis, elaborates on her ideas more closely, by explaining that printed learning materials can hardly be adjusted to fit individual needs, while various virtual learning environments (VLE) can eradicate this problem by altering difficulty and pace to correspond with the level of the student

At the root of student performance is, among other things, the teacher’s ability to consider the peculiarities of each individual learner. It is evident that with the help of ICT, this

problem can be more easily tackled as issues like motivation, pace and language level are dealt with by different means of ICT. Therefore, both students and teachers can expect better, faster results that, thanks to increased motivation, are more likely to remain on the achieved level.

## **1.2 BARRIERS TO USING ICT**

Bingimlas (2009) talks about possible barriers to integrating ICT into a school classroom. In his work, he uses the definition provided by WordNet (1997, as cited in Schoepp, 2005, p. 2) of “barrier” as “any condition that makes it difficult to make progress or to achieve an objective”. In this thesis, the “objective” can be the successful introduction of ICT to English language classrooms. The barriers themselves can be classified in different ways, but for the purposes of this paper, BECTA’s (British Educational Communication and Technology Agency, closed March 2011) (2004) classification of teacher-level versus school-level barriers is used. In this classification, barriers are divided into two groups: those that are related to the individual (the teacher) and those related to the institution (the school). According to Bingimlas (2009), the former include lack of competence or confidence, as well as negative attitudes and a “resistance to change” (ibid.: 237) and the latter include lack of time and “effective training in solving technical problems and lack of access to resources” (ibid.). Additionally, school-level barriers can include limited technological support from school, as stated by Gilakjani and others (2015: 215). This chapter examines the more commonly reported barriers, although there are undoubtedly many more.

What causes teacher-level barriers can be debated. Some studies (BECTA 2004; Balanskat et. al. 2006, as cited in Bingimlas 2009: 238) suggest that it is the teachers’ incompetence that prevents them from confidently applying ICT to their teaching methods, while others (Beggs 2000, as cited in Bingimlas 2009: 238) find that it is the teachers’ fear of failure. Both can be true and are in fact evident in the data analysis later. Teachers often feel inferior in

their knowledge of ICT to that of their students. Their lack of knowledge in the field, combined with the fear of being belittled by their students can prevent them from ever attempting to use ICT and realize its usefulness (Bingimlas 2009: 238).

Teachers are generally aware of the technological tools available but may be resistant to change their ways of teaching to incorporate new tools. Both BECTA (2004, as cited in Bingimlas 2009: 238) and Empirica (2006: 40) suggested that teachers with negative attitudes towards ICT often did not understand the value and opportunities that ICT provided. In other words, teachers that are not educated and competent enough can discourage the use of ICT in classrooms.

Teachers' ICT incompetence is one of the core barriers in teacher-level barriers, from which others result. The level of competence varies from region to region, with Estonia showing promising data, with at least 60% of all teachers using computers daily in their teaching practice, even in the lowest-income municipalities (HITSA 2014: 20). However, as there is currently not enough research into Estonian teachers' attitudes towards ICT, final conclusions cannot yet be made.

Many teachers find that the biggest obstacle to using ICT in their lessons is the lack of time for preparing tasks and familiarizing themselves with the available resources (Bingimlas 2009: 239). Creating new projects using unfamiliar ICT can be extremely time-consuming and as teachers' workload is already rather heavy, many opt for the easier way out of using more traditional methods. Unfortunately, it seems that there is little that can be done about time-management. Bingimlas (*ibid.*: 243) suggests that either schools could reduce the number of lessons per day or that teachers could learn to manage their time better. However, neither of these solutions are easy to implement and the issue of time remains one of the most difficult ones

to solve.

The barrier that has little to do with teachers' interpretation of it is the lack of accessibility to up-to-date technology. This barrier is directly linked to the school management's decisions and potential to bring accessible ICT tools to their teachers and students. This can be affected by many factors, the most common of which are funding and room management. In the case of insufficient funding, schools simply lack the opportunity to purchase computers and other devices for the teachers to use. Furthermore, it can prevent teachers from taking additional courses, as the funds to pay for their substitute have to come from their own pocket. In the case of room management, classrooms in schoolhouses are over-booked and there is often a very large student-to-computer ratio (Laanpere 2014). This is more common in large schools with too many students for the size of the schoolhouse. Computer classes and access to other devices require previous reservation, forcing the teachers to plan their lessons more than is realistic.

Lastly, it is important for the teachers to be able to contact a technical support person when the need arises (Gilakjani et al. 2015: 216). Lacking such an option may be discouraging for the teachers as they can feel helpless in unexpected situations with no safety net to help them. This issue, much like the inaccessibility of reliable ICT tools, is related to school funding. Not only does it make teachers uneasy about possible problems with ICT, lack of a support system also means that teachers have nobody on hand to support their own development in the field (ibid.).

There are many setbacks that teachers may encounter when using ICT. Inexperienced teachers might feel unequipped to work with technological tools. Their prejudice and fear can prevent them from even trying out new solutions and lead to stagnation. In addition to competence, another major factor that affects teachers' choices in the matter is the lack of time.

Teachers' often have a lot of tasks that leave little room for time-consuming projects. Moreover, if the available technology is unreliable and slow, teachers may opt for the faster way out to save time. Finally, the existence of an effective support system is vital for teachers to feel prepared and safe when getting accustomed to new technology. A safety net is needed to deal with problems as soon as they arise. Otherwise, teachers may feel that the school does not support their endeavors and development.

### **1.3 TEACHERS' ATTITUDES TOWARDS USING ICT**

Teachers form a group that drives students to be motivated, curious and experimental. They open the world of information to young people and by guiding them through it allow students to discover both themselves and their surroundings. Ohu (2013: 14) states that "the effective application of modern technologies at school draws heavily on the skills and proficiency of the people who work with them." In addition to the skills required to create and work with digital learning materials, teachers also need at least a neutral, open-minded attitude towards ICT. According to some researchers (Almusalam, 2001; Kluever et al. 1994; Afshari et al. 2009), teachers' attitudes can determine whether and to what extent ICT is used in the classroom at all. If a teacher is afraid of or unwilling to use ICT in their teaching, they may limit themselves and their students to a classroom that cannot help achieve the students' maximum learning potential (Harrison and Rainer, 1992). Studying teachers' attitudes towards ICT is crucial to identify and solve any problems that may be holding teachers back and making them uncertain about the benefits of incorporating multiple methods of teaching.

There is a plethora of research done on teachers' attitudes towards ICT (e.g. Fook et al. 2011; Wang 2014; Deaney et al. 2006). The results differ from country to country and region to region. It appears that researchers in Asia and the Middle East are more concerned with the matter than those in Europe or elsewhere. In Estonia, only one larger-scale study of this nature

was carried out in 2012 (Luik 2012). Estonia, and the Western world in general, seems to be focused on studying the benefits of ICT or the ways of using it, seldom considering how the concerned parties perceive these methods and what can be gathered from that. This is an interesting phenomenon and could be studied on its own.

### **1.3.1 Existing research: Other countries**

Several reports, theses, and articles have been published on the topic in different parts of the world (Al-Maini 2013; Fook et al. 2011; Drossel et al. 2016; Ruthven et al. 2004; Deaney et al. 2006; Roessingh 2014). The papers present different findings about teachers' attitudes, but agree on some of the principle ideas, such as the need for an effective support system at schools (Bingimlas 2009; Gilakjani et al. 2015) or that a lack of teacher confidence can lead to an inefficient learning environment (Bingimlas 2009), while purposeful use of ICT can help improve learning outcomes and student motivation (Ghaznavi et al. 2011; Gregory and Kaufeldt 2015).

Roessingh (2014) describes how teachers' roles have changed with the introduction of ICT and Task-Based Learning (TBL). In the paper, she presents a sample of a series of tasks for learners of English and describes her own experience as a teacher using TBL with the help of ICT. Her work is supported by theoretical background about ICT, TBL, CALL and teaching language through content (LTC). She suggests that teachers must compose their tasks mindfully to help students adjust to a multicultural and multilingual environment (ibid.: 2). Her findings suggest that by incorporating ICT in a meaningful way, teachers could help students learn from motivating tasks that are relevant to their interests (ibid.: 15). Therefore, analyzing teachers' attitudes towards the use of ICT can help determine their readiness and the effectiveness of the already existing courses, as well as create a basis for applying technological tools in an efficient way and determine the flaws in the education system.

Teachers play a vital role in computer-assisted learning, as it is their task to create meaningful tasks and activities and guide the students not only in terms of language but also in terms of using technology and different programs. In order to do that, teachers need to be taught to use ICT on a sufficient enough level so that they could pass their knowledge on and fulfill their duties swiftly (Beca, 2004; Cebrian, 2003; Cox, Preston, & Cox, 1999; Gisbert, 2001, referenced after Wang 2014: 193). In a study carried out by Fook and others (2011), in which the researchers carried out a quantitative survey among 70 pre-service teachers to determine their preparation, competence, and attitudes towards using ICT, Malaysian teacher trainees evaluated their readiness and level of training highly, stating that while there were some worrying factors, teachers were generally enthusiastic and optimistic about using ICT in classrooms. Similarly, a study about teachers' attitudes towards ICT was carried out by Zhang and Martinovic (2008) in Canada, but both their method and findings differed from those of Fook (2011). A questionnaire was formed to gather information about the participants' background. In addition to that, semi-structured interviews were carried out with teachers, who were divided into two focus groups which met on a regular basis to discuss their development. The emphasis of the interviews was on elaboration and analysis, where the interviewers urged the participants to express their attitudes in depth. Zhang and Martinovic (2008) found that teacher trainees were often frustrated with the omnipresence of ICT and that they felt ill-prepared to navigate in that field. From the difference between Malaysian and Canadian teachers' perceptions, it can also be concluded that an analysis of Estonian foreign language teachers could further emphasize the peculiarities of the teachers of the region, as it is highly possible that the attitudes in Estonia are different from countries already studied.

In 2004, a study by Ruthven and others was published in the United Kingdom that

analyzed teachers' experiences with ICT in three secondary school subjects: English, mathematics, and science. In the study, group interviews were carried out with the teachers of each subject to determine their professional opinions on the use of ICT for teaching their subject. The interviews were semi-structured and were carried out at the secondary school level in six schools in the United Kingdom. The study showed that according to English teachers, ICT had a significant impact on the way students learned and behaved in class. All of the teachers who participated reported that ICT had positively impacted their teaching, as well as the learners' results. Students reportedly produced higher-quality work faster and more efficiently (Ruthven et al. 2004: 12-13). Moreover, spell-checking and dictionaries encouraged more developed vocabulary (ibid.: 14), making students more adventurous in their language learning journey. Students tried "words they wouldn't use otherwise because they know it will be checked" (ibid.).

In addition to increased vocabulary and a higher quality of work, teachers reported that ICT brought variety to their classroom that other tools could not achieve (ibid.). This, and the excitement that ICT added to tasks (ibid.: 15) increased student motivation and activeness. According to one teacher in the study, motivation also comes from familiarity: "It's a modern tool that children see as being bang up to date and much more theirs/.../ Psychologically they feel that this is their territory and they can do things/.../ that we hesitate with" (Ruthven et. al. 2004: 16).

In 2006, Deaney and others examined British teachers' "practical theories" of ICT in teaching and learning. In other words, they looked at how teachers understand what they and the students are doing in a learning environment and how this can be translated to the theoretical background. They conducted a series of "within- and cross-case analyses" that examined teachers' attitudes in five categories: "broadening classroom resources and reference; enhancing

working processes and products; fostering more independent pupil activity; mediating subject thinking and learning; and improving pupil motivation towards lessons” (Deaney et al. 2006: 2). These categories emerged from the interviews conducted with the teachers and were not pre-determined. They reflect the teachers’ attitudes towards and understanding of ICT in educational settings.

As these categories suggest, teachers had adopted a positive mindset towards ICT. They found that technology is a multi-purpose tool that can bring information closer to students, and in the case of English, make textual material more readily available to analyze (Deaney 2006: 6). Similarly to Ruthven and others, Deaney found that the works produced using ICT had a higher quality thanks to formatting tools, spellcheckers, and other tools that encourage independent error correction. Another similarity between the two surveys comes from the mention of independent tasks. Teachers found that ICT can help students work on their own. Teachers specifically gave self-directed tasks to students as they found those to be most effective for developing independent thinking and problem solving (ibid.: 7). Furthermore, independent work was reportedly quicker and more effective (ibid.: 6-7). Awareness of text-manipulation was also mentioned, as teachers expected technology to be a useful tool to help students realize the importance of “format, audience and purpose” (ibid.: 7). Lastly, and most obviously, teachers anticipated a surge in student motivation in lessons thanks to the previous categories. Effectiveness, self-directed work, immediate feedback and the availability of resources all encourage students to work and improve their skills through meaningful and captivating activities. Neither Ruthven and others (2004) nor Deaney’s (2006) studies point to any negative emotions regarding ICT. Teachers in the surveys referred to it as an overwhelmingly positive and progressive set of tools and did not mention its shortcomings. This sets the studies apart from the

previous ones, as those generally at least mentioned frustration, confusion or concern.

As teachers' attitudes differ from country to country, it is difficult to draw an objective conclusion about the readiness and attitudes of language teachers, nor could any of these findings be applied to Estonian context without first comparing them to the findings about the attitudes of Estonian foreign language teachers.

### **1.3.2 Existing research: Estonia**

In 2012, an interim report was compiled by Luik and others on the effect of teachers' ICT use on the students' conscious use of technology. A part of that report touched upon teachers' attitudes towards ICT, but it was neither the main focus of the study, nor was that part exhaustive in its conclusions (ibid.: 10). However, it is one of the more thorough works on the matter to date and follows a format similar to the thesis at hand. In-depth semi-structured interviews were carried out with 19 teachers from different schools in Estonia. The aim of the interviews was primarily to gain an overview of teachers' knowledge of technology in the context of education in three thematic categories: training in ICT, experiences with ICT in lessons and the role of the teacher in the developing classroom. The study found that the use of ICT tools is not affected by the school so much as it is affected by the individuals' readiness and their access to ICT equipment in classrooms. Luik et al. concluded that teachers mostly held a positive attitude towards ICT and understood its value as a classroom tool (ibid.: 16). They realized that provided with enough support and tools, teachers could become proficient users of technology in classrooms.

In 2012, the most prominent issue that teachers identified was the lack of funding (ibid.: 17). Schools seldom have the means to invest in up-to-date equipment and training and provide the support that teachers need to feel confident using ICT. Another issue that came up was the teachers' distrust in the technology itself. They fear it is not up to date and may fail them at a

critical moment (ibid. 18). What is more, if a teacher is not experienced with ICT, they can find obstacles in even the most mundane situations, such as having to book the computer class or setting up a network. Their fear of the technology comes from inexperience rather than negative experience and this may prevent them from trying out new tools in the first place. Finally, some teachers, especially those of younger students, feared that the playful nature of ICT-based activities can distract students from learning the topic at hand (ibid.: 13).

Estonian teachers found that the role of ICT in classrooms is changing. ICT used to be intriguing and new, which made it desirable as the central tool of a lesson, with other methods supporting the use of computers, but in 2012 teachers saw it as more of an extra step to illustrate and support other methods of teaching. A “successful lesson” was considered one where ICT can be used in addition to other methods such as work with a partner or a book (ibid.: 8).

Overall, teachers were not opposed to using ICT and did not have negative attitudes towards the tool as such. Main issues had to do with fear of failure, either by the teacher or by the technology and this resulted in passiveness, rather than outright opposition. In general, teachers were in favor of using ICT and saw it as a tool with clear benefits (ibid. 10). Many teachers who had tried using ICT tools in their lessons said it was a convenient and effective way of adding value to lessons. ICT was seen as a kind of support system for other teaching methods and students seemed to enjoy it. In fact, one teacher confessed to using ICT and lessons in computer labs as a way of rewarding students (ibid. 8). It is captivating for the students and can help to make the lessons more interesting and versatile. Another teacher said that playfulness, while it can be distracting, is important for the students because it adds an element of competition which they seem to enjoy (ibid.).

From what can be gathered it seems that five years ago teachers were optimistic and

hopeful about using ICT in classrooms. At the same time, they were aware of the possible barriers, which were mainly caused by the lack of funding. Most of all, teachers valued support and training provided by the school, as well as reliable technology. What authors stress is that teachers should be trained exhaustively and provided with the support they need in order to successfully incorporate ICT into education. Overall, teachers found using ICT in moderation and as a complement to other methods can be stimulating and motivating for the students.

Despite the work that has been done, there is still a large gap in anything related to teachers' attitudes towards ICT in Estonia. The report by Luik and others (2012) does describe teachers' attitudes towards ICT to some extent, but much of the focus of that report lies elsewhere. Furthermore, technological developments are happening quite rapidly nowadays and much may have changed in this field in Estonia in the last five years.

## 2. EMPIRICAL STUDY

### 2.1 INFORMANTS AND METHOD

**Informants.** The interviews were carried out with 15 English teachers from Estonian schools. There was one teacher from a rural school and the rest were from larger Estonian towns. All of the informants were women. 11 of the teachers work at public schools and 4 at private schools, whereas all of them teach or have recently taught English to secondary school students. The informants varied in their length of employment. Some of the younger teachers had a teaching experience of fewer than 3 years, while some had been working for over 40 years. However, the exact length of employment was not considered a factor in using ICT and therefore was not specified in the interviews. The age of the teachers varied considerably, with the youngest teachers being only a little over 20 years old and the oldest being well over 60, but for the purpose of simplicity, there are only two age categories: younger and older. The younger age group consists of teachers aged 20-39 and the older age group of teachers 40 and up. As the exact age of the teachers was not determined, this classification is based on estimates and serves as additional aiding statistics in drawing conclusions at the end of the thesis.

*Table 1. Overview of the informants*

	Age group	Type of school	Location of school
T1	Older	Public, large	Rural
T2	Older	Public, large	Town
T3	Younger	Public, large	Town
T4	Younger	Private	Town
T5	Older	Public	Town
T6	Older	Public	Town
T7	Younger	Public	Town
T8	Younger	Public	Town
T9	Younger	Private	Town
T10	Older	Public	Town
T11	Older	Public	Town
T12	Older	Public	Town

T13	Younger	Private	Town
T14	Younger	Private	Town
T15	Older	Public	Town

When choosing informants, the convenience sampling strategy (Dörnyei 2007: 129) was used. Interviews were carried out with teachers that the researcher shared common acquaintances with, could be contacted, had the time and were willing to participate. Most informants were found by requesting contacts from the university professors, taking advantage of teacher practice in schools or contacting friends in the teaching practice. With limited resources of time and finances, this was the most rational of the strategies. For some instances, the social network method was used – the participating informants referred the researcher to other possible informants who were then contacted. The method was time- and energy-saving, but unfortunately, many informants were unable to suggest colleagues who would be willing to participate. The lack of time was often given as an excuse for this.

**Data collection.** The survey was carried out in the autumn of 2016 and January of 2017. A total of 15 teachers were interviewed in a series of semi-structured interviews in a face-to-face setting. This method implies that the interviewer prepares a set of guiding questions but is not entirely constricted by the prepared interview plan. Instead, semi-structured interviews encourage interviewees to elaborate on each topic as freely as they wish (Dörnyei 2007: 136). This is achieved on the interviewer’s part by asking open-ended questions and making on-the-go changes to the interview plan as the need arises, like asking follow-up questions to encourage the interviewee to explore the topic further. Semi-structured interviews are most often used “when the researcher has a good enough overview of the /.../ domain in question and is able to develop broad questions /.../ in advance, but does not want to use ready-made response categories that

would limit the depth and breadth of the respondent's story" (Dörnyei 2007: 136). This particular method was chosen for the study because it allowed the researcher to guide the interviews so that the data collected would provide answers to the research question, while also allowing for unanticipated information to emerge from the informants' uninhibited answers.

The informants were notified of the purpose and use of the interviews and all of them gave a verbal consent prior to giving the interview. All interviews were recorded with the interviewees' permission and later transcribed. Additional notes were taken by the researcher during the interviews. The interviews lasted 15-35 minutes and the duration of each interview was determined by each interviewee's individual input, i.e. how opinionated they were about the topic. The transcriptions are available at the Department of English Studies. None of the names of the informants or their schools are disclosed in the thesis or elsewhere. The transcriptions, along with the researcher's notes, were the basis for the analysis and discussion of data in the empirical part of the thesis.

When compiling the interview plan, the following seven questions were used as guidelines. This ensured that the data that is gathered with the interviews is relevant and in correlation with the research questions.

1. How do teachers apply ICT in their teaching practice?
2. What are the teachers' main fears regarding ICT? How are they manifested?
3. What do teachers regard as positive about ICT?
4. How do teachers evaluate their training and their skills?
5. How much and what kind of support do teachers receive from their schools?
6. What are their suggestions for improvements in the field?
7. If there are any patterns in teachers' opinions, what can they imply?

One pilot interview was conducted prior to the data collecting period. The pilot interview highlighted some of the shortcomings of the interview plan and helped eradicate them. Thus, some of the questions were changed to be more open-ended and possible follow-up questions were suggested. For example, simple “yes or no” questions were re-modeled to answer the questions “how” and “why” instead. Also, the wording of some questions regarding expectations and suggestions was simplified as the interviewee in the pilot interview did not seem to understand the questions at first. After analyzing the pilot interview, it was determined that the data gathered using this plan was ample and could give enough information to analyze later.

**Data analysis.** Due to the somewhat vague nature of the topic of the thesis – teachers’ attitudes – the method of content analysis of semi-structured interviews was chosen. Krippendorff (2004) defines content analysis as “a research technique for making replicable and valid inferences from texts (or other meaningful matter) to the contexts of their use” (Krippendorff 2004: 18). After conducting the interviews and transcribing them, the content of each transcription was carefully analyzed for indications of attitudes towards ICT. These indications included phrases and words that had an emotional charge (such as “it’s just so difficult” or “all the time”), emotion words (such as “love”, “happy”, “dislike”) and recurring phrases and ideas. The latter helps draw conclusions about what teachers are most concerned with and what crosses their mind most often. All relevant phrases were tagged and the notes taken during the interviews were added to the transcriptions to form a single unit of easily understandable documentation. All mentions of technological tools and ICT courses were also tagged to form an overview of how familiar teachers are with the different options and how many of those they use. The expressions of teacher’s attitudes were noted during the interviews and later summarized to assist in the data analysis process.

The data was analyzed again to form topic categories (e.g. “stand on using smartphones in lessons”, “ICT’s effect on discipline” etc.) A total of 17 categories were formed, including the teachers’ profiles (age group, type of school and location of school). These categories emerged naturally from the interviews and were not pre-determined. Data about each informant was then summarized in a table (see Appendix). Next, by comparing the respondents’ answers to one-another, trends and peculiarities within each category were determined. These results are discussed in the data analysis section of the thesis. While each category was analyzed separately, the discussion of results section studies the possible connections between them (e.g. how the use of smartphones can affect class discipline).

Content analysis method ensures that the maximum amount of relevant information can be gathered from the interviews. A survey, questionnaire or some other similar method of research would not have given participants the opportunity to reflect on their experience, nor would it have allowed the researcher to guide the discussion with semi-structured questions. The shortcomings of the content analysis method come from its dependence on “mutually exhaustive categories” (Stemler 2001). Each word should characterize only one category without exceptions. However, conversational language is often ambiguous and people may use signal words in different contexts, making it difficult to determine their connotation. Despite that, content analysis is better suited for this thesis than other methods and the mentioned drawback can be overcome by considering the context of the surrounding words and making deductions based on that.

## **2.2 RESULTS**

The purpose of this section of the thesis is to present the findings of the analysis. The data is divided into 8 subcategories, giving an overview of what ICT tools are available to teachers in

schools and how they use them, what teachers like and dislike about ICT, how they perceive the effect that ICT has on student's results and motivation, how ICT affects their time management, what they think of the support they receive from their school, how teachers work independently to improve their skills with ICT, how they think cooperation with colleagues could affect their opinion on ICT, and what their suggestions for improvements in the field are.

### **2.2.1. Using ICT in lessons**

**Level of equipment in schools.** Two-thirds of the participants believe their schools to be well-equipped for work with ICT. Some of those participants were extremely happy with the level of equipment and found that their schools were actively investing into reliable technological solutions and constantly updating devices and software. Even those who said that their schools have limited funds to spend on technology, said they are always assisted in every way possible. The rest of the teachers said their schools were poorly equipped, with only a computer for the teacher in each classroom, a computer lab and, in some instances, projectors and projector screens. The lack of reliable equipment was mainly attributed to insufficient funding. One school had even made cutbacks at the expense of ICT, as the IT-support person was made redundant.

**Initiative to use tools.** Of those teachers who actively use ICT, more than half showed dedication and initiative to use and try out different tools. Researching possible solutions and looking for new possibilities was more common for those teachers that had previous experience and received more support from their school. Some of the teachers who use ICT said that they do not go out of their way to discover new methods, especially if the existing tools work well. Often the reason for this was not indifference or lack of initiative but limited time to prepare new materials. Those teachers that did not use ICT were all aware of the available tools but did not show interest in trying them out or finding out more about them.

The majority of the teachers said they use ICT very often, with some specifying “as often as possible”. Three informants reportedly use ICT “sometimes” or “often”, but do not center their classes around it. Two teachers said they rarely use ICT in class, often avoiding it if they can. Finally, there was one teacher who said that she never uses ICT except for documenting her lessons.

**Using smartphones in class.** Four teachers out of 15 strongly support using smartphones in class. The common explanation was that personal phones provide an easy gateway to online sources and are readily available. An equal number of informants reported that they allow the use of smartphones, but only in certain situations, following previously set rules and limitations to using personal phones. Three teachers said that they do not use smartphones. Each of them gave a different reason for it: one teacher said it was simply the school custom and there was no need for it. Another teacher reported that she prefers that the phones be put away and on silent mode to avoid problems with discipline. The third teacher had a visibly aggressive stand against smartphones and said that students should not spend their entire days online. She also reportedly gave “selected students” permission to use their phones, while denying this opportunity to their classmates. There were also two teachers who said they do not use smartphones because their school has provided an iPad for each student and they use these instead.

### **2.2.2 Overall stand on ICT**

**What teachers value about ICT.** Nearly all of the respondents described ICT as a fast, new and interesting tool. They said it has simplified the work of both themselves and their students by offering solutions that are quicker and simpler than some previously used options.

More than half of the teachers believed that ICT can help improve student motivation due to the interest that students seem to have in technology-based tasks. These teachers used ICT

both as a way of making the lessons more interesting and fun, and as a special reward for the students. For example, if the entire class did well on their test, they would get to play two rounds of Kahoot or do some other ICT-based activities.

Only two teachers purposefully use ICT as a learning tool because of the resources that it provides. Most teachers did not mention ICT's role as a regular learning tool that is equivalent to other learning methods.

Seven teachers mentioned using ICT because it helps simplify and complement other teaching methods. They did not see ICT as something that has independent value, but rather as an assisting tool in lessons. Some teachers mentioned information systems like eKool and Studium, which help document lessons and give home tasks and feedback. Others said technological solutions offer alternatives to time-consuming activities such as printing worksheets or writing by hand. For them, ICT saves a considerable amount of time and energy that can be used for other activities in the lessons.

**What teachers regard as negative.** Almost all of the teachers associated negative aspects of ICT with technical problems. Outdated and unreliable ICT tools can cause situations where solving technical problems might take more time than teachers can afford to lose during lessons. Some teachers said that they sometimes avoid using ICT as an option for teaching a subject because the slow computers and poor wi-fi connection might bring about unexpected difficulties and be frustrating for both teachers and students. A few teachers admitted that they fear technical problems because encountering them in the classroom can make teachers look unprofessional in front of their students and diminish the established authority. Finally, a few teachers admitted that they can get frustrated when an ICT-based activity they have prepared does not work due to technical difficulties or lack of internet connection. Therefore, if they cannot take measures to

prevent these possible issues from happening, they may opt for another method of teaching the same topic.

One teacher had a particularly negative attitude towards ICT. She believed that classroom should be the place where students and teachers get away from the virtual world and, especially with language lessons, interact with one-another face to face. Her argument was that everything is digitalized to the point where most of the day is spent staring at screens, which is unhealthy and antisocial. Schools should therefore not promote this method of learning, but rather find alternatives to it when possible to encourage immediate interactions between students and teachers.

There was also a teacher who associated ICT-related drawbacks with whether the objectives are met or not, and whether the particular tool is suitable for all students. She believed that ICT, like any other learning media, should take into account the goals and needs of the students and only if they are met, can the method be called efficient.

Finally, when asked about the connection between ICT and discipline, almost half of the teachers said that ICT could potentially cause problems. However, many of those teachers added that such disturbances are rather uncommon and can be avoided by implementing class rules. Four teachers believed that ICT does not cause problems with discipline. They said that disciplinary problems are caused by the people in the class, regardless of the learning tools. Most of these teachers also emphasized the importance of class rules and pre-existing agreements in avoiding problems with behavior. Two teachers found that ICT is likely to cause problems with discipline. One of them mentioned the importance of rules in avoiding such problems and the other did not believe class rules to play a role in it.

### **2.2.3 The effect of ICT on students' results and motivation**

Out of the 15 informants, 7 denied ICT's positive effect on students' learning results. The main argument was that a good teacher can teach with whatever tools they have at hand and if a student is not willing to learn, then ICT cannot change that. 5 informants could not tell if ICT was somehow affecting learning results or not and only 3 said that ICT has a positive effect on results. However, all three only mentioned improvements in vocabulary test results thanks to resources like Quizlet. ICT did not affect other language aspects at all.

While having little effect on learning results, ICT is reportedly very useful for increasing student motivation. Almost all of the teachers said that thanks to various games and activities, students are much more invested in the lessons. One teacher pointed out that before the introduction of games like Kahoot, students would start packing their things five minutes before the end of the lesson, but now she finds that if there is some extra time left before the lesson ends, students prefer to do said activities. A few teachers pointed out that increase in motivation is doubtful, but ICT has certainly made students more active and cooperative. They believe that it is due to natural excitement about a new and interesting thing, rather than a surge in motivation.

### **2.2.4 Time management**

When discussing the topic of preparing ICT-based tasks for class, the teachers were almost unanimous in saying that preparation is often very time-consuming. What is more, many teachers felt that they must often compare the time they spend preparing a task to the time it actually takes the students to complete the task in class and if they find that hours of work culminate in mere minutes of class time, they often decide not to take on the task at all. On the other hand, once prepared, the tasks can be used again and again and can save the teachers trouble in the future. This is why some teachers said that, although time-consuming, they still try

to create as many of these activities as possible. Some teachers also said that the use of ICT has made many preparatory activities much easier for both them and their students. For example, distributing home tasks, independent work, and projects and giving feedback are a lot more immediate now than when all this had to be done in class or on paper. Logging lessons and giving marks is also much faster and students have a clearer overview of their progress.

While preparation for ICT-tasks was mainly considered to be time-consuming, the opposite was true with in-class activities. Most of the teachers found that ICT can actually help some materials be learned faster. This is because of two reasons: firstly, ICT-related activities are mostly associated with fun and games. Teachers said that students are excited to work with technology and try out different programs, games and other tools. Secondly, work with computers is often much more immediate. Students get quick feedback from tasks and can make corrections as needed. Any information they may need, such as vocabulary, pronunciation or information on interesting topics can be easily accessed via the Internet. Teachers have less trouble keeping an eye on students' progress both individually and overall, which in turn gives valuable feedback to the teacher on whether the task they have chosen is efficient.

However, ICT can only save time in the classroom if the technology is reliable, as teachers often mentioned. If getting the computer lab ready takes 15 minutes, it is by no means a time-efficient choice to use it for the lesson. Similarly, if school computers are not compatible with the prepared activities, it may happen that the entire lesson will have to be reorganized.

### **2.2.5 Employer's support**

**Teachers' ICT training.** All of the teachers have some experience with ICT. Of those teachers, 13 have had training in the schools they work or have worked at. The two others have not worked at a school for more than two years and their ICT training comes from university

courses. Most of the teachers have positive attitudes towards ICT courses and look forward to them taking place. A few teachers lack self-initiative to take part in said courses, however. One teacher felt they are too time-consuming and sometimes unclear. Another teacher had a negative attitude towards ICT and training overall and said that if the school offered free courses, she would still not go unless she was forced.

Some of the most frequently mentioned training course topics included hardware such as iPads, smartboards, and computers in general. Additionally, courses on numerous software solutions were mentioned, starting from the basics like MS PowerPoint, Google Drive and Studium or eKool, followed by more complex and specific programs like video-editing software, online learning environments like Quizlet, Padlet or Quizalize, and games like Kahoot. Some of the courses that were mentioned also show teachers how to find information and use the Internet as a learning opportunity. Most of the teachers said they found the courses useful and the skills applicable in various classroom situations.

There were two main types of training courses mentioned in the interviews. One was organized by the school where the teacher worked and usually takes place in the schoolhouse, after lessons. Because it is organized by the school, the expenses have generally been covered and the teachers do not have to pay any fees. Schools may organize these training courses as often as they can or as need demands. Whether the course is mandatory or not is decided by the school. Other training courses are held by some other organizations, often universities. These may cost money and sometimes take place during school lessons. This means that if a teacher wanted to take part in such a course, they would have to find a substitute for their lessons, pay an admission fee and in some cases, as some informants said, also pay the substitute for their

lessons, because it is not covered by the school. Because of those reasons, all of the teachers (who showed an interest in training) preferred courses organized by their schools.

**Overall values and support from schools.** 11 teachers out of 15 reported that their schools offer great support with ICT in every way that they can. Overall, digital competence is well represented in school curricula and teachers are provided with the tools, support, and training they need. However, there were four teachers who said that support from schools is limited or has diminished. Funding was generally mentioned as the main cause of this, as money is channeled into other, more pressing issues. One teacher also said that her school does not emphasize and support using ICT simply because their school has a different approach to learning that includes minimal use of technology.

Most schools organize ICT courses regularly, as often as they can. Some teachers said they have a new course every few months, while others mentioned a few courses per year organized by the school. Private schools had an advantage here over public schools because their funding is generally much better. Teachers from private schools said that not only do they have frequent courses, their technology is of good quality and their own endeavors are supported more by the school. Public school teachers said that their schools do all they can and if possible, support teachers' courses outside the school as well, but sometimes they fall short of resources.

### **2.2.6 Independent learning**

While every teacher has taken part in at least some kind of training courses, far fewer reported learning new ICT skills independently. Age was a major factor in independent learning. Younger teachers were much more active in this aspect than older teachers, as almost all of the teachers in the "younger" age group reported wanting to discover various methods of teaching that the courses have not covered. While some of the older teachers were still active independent

learners, many of them found it intimidating, difficult or time-consuming. Even some younger teachers said that if a new program takes too long to grasp, they will likely lose interest and not waste time on it. One teacher said that if the time it takes for her to understand how something on the Internet works is longer than 10 minutes, then it is poorly designed and explained and thus not worth her time.

### **2.2.7 Cooperation and borrowing**

A few teachers mentioned that they have learned a lot by visiting other teachers' classes when they have something new planned. Similarly, some teachers who were more competent in ICT had colleagues come to their classes to observe and learn new techniques. A couple of teachers also said that some more extensive projects are often done by a team of teachers, rather than a single person. To those teachers who have experienced it, cooperation is irreplaceable, as it significantly cuts down on teachers' work load and compensates for the lack of experience they may have. What is more, teachers said that working together strengthens relationships and acts as a safety net for teachers in new learning environments.

### **2.2.8 Teachers' proposals for improvement**

Two younger teachers who use ICT actively proposed that increased cooperation and support from colleagues and school could help those teachers that are skeptical about ICT to overcome their doubts and try out new methods of teaching. One of them said that in her experience, it is often the lack of experience and a sense of comfort that prevents some teachers, particularly older ones, to start using technology. As an example from her own school, she pointed out that schools that are new to ICT could implement a bonus system, rewarding those teachers that used ICT tools effectively. This would ensure that the investments made in this are not wasted and teachers are encouraged to step out of their comfort zones.

One young teacher stressed the importance of ICT infrastructure in schools. She said that

for technology-based learning to work, all connections must work properly, technology has to be up to date and there has to be a designated position for an IT-person, who would solve any problems that come up and help teachers with their work. Another teacher supported that idea by saying that technology should be taken care of and invested in, so that it will not fail at critical moments.

An older teacher who actively uses ICT said that in addition to teaching students how to use the Internet and various information sources, it is also vital to emphasize critical thinking. As useful as the Internet can be, there is also a lot of noise and harmful material that students should be able to recognize to keep themselves safe.

Many teachers pointed out that while ICT is fun and useful, it should be used in moderation. None of the 15 teachers believe that ICT should substitute all other methods of learning, nor do they think it is possible. Some teachers said that ICT, like any other method, is only fun as long as it is not too frequent. Students grow tired of repetition and even the newest technology will lose its charm. A few teachers also mentioned that frequent use of ICT can be harmful to eyes and concentration span. Taking into account the health of both students and teachers, technology in classrooms should be limited and only used when it is useful and rewarding.

While most schools are relatively well equipped with ICT tools, some teachers feel that more could be added to make work with technology easier. For example, one teacher proposed that there should be a set of laptops for every few classrooms to reduce the queue for the computer lab and make it possible for teachers to make quick decisions about what tool to use. This could improve lesson quality and increase students' attention and motivation thanks to a quick change of pace.

A few teachers pointed out that the amount, quality, and accessibility of ICT courses is insufficient. One teacher said that courses should be more thorough and perhaps longer, so as not to go over new information too quickly. This is particularly important for older teachers who may sometimes take longer to process new information. Courses that are held outside of the school should also consider teachers' schedules and not organize courses in the middle of workdays. This way more teachers could participate and the efficiency of the courses would be much higher.

## **2.3 DISCUSSION**

As Roessingh (2014) pointed out, the way teachers introduce ICT into their lessons is crucial for students' readiness to learn and adjust. As the findings of this study show, teachers believe that unregulated use of ICT can do more harm than good and that moderation and mindfulness are key in creating a learning environment that is versatile, motivating and educating.

In terms of readiness to use ICT, it seems that Estonian teachers fall somewhere between the example of Malaysian teachers (Fook et al. 2011), who were well-prepared and enthusiastic about using ICT, and Canadian teachers (Zhang and Martinovic 2008), who were more skeptical and less prepared. While there were some teachers who felt frustrated with ICT and had doubts about their readiness to use these tools, most had a neutral or positive stance towards it and said that with enough support and training ICT should present no serious problems for any teachers.

While Ruthven and others (2004) found that ICT has a clear impact on students' learning results, this thesis concluded that Estonian teachers do not feel the same way about ICT. In fact, in some cases, the opposite was true, as games disrupted the workflow and distracted students with extraneous matters. However, some teachers said that thanks to access to the Internet,

students have the option to check unknown words and pronunciations and this could affect their learning outcomes. Whether students choose to use this access for learning purposes or not is not necessarily dictated by the presence of ICT tools, but previous agreements and rules, as well as students' intrinsic motivation.

Ruthven and others (2004) and Deaney (2006) also found that ICT contributed to students' increased motivation thanks to exciting tasks and added variety. Here Estonian teachers agreed, saying that ICT is a great tool for combating boredom and keeping lessons interesting and well-paced. While they did not mention that motivation comes from familiarity, they said that students can be externally motivated with ICT by offering it as a reward for productive work and cooperation. Teachers did not see this as bribing, but rather an encouragement to put in more effort and find joy in the learning process.

While neither Deaney (2006) nor Ruthven and others (2004) reported any negative attitudes towards ICT, reservations about using ICT were clearly represented in the results of this thesis. Most of the teachers were rather open to the idea of using ICT in classrooms, but there was also some strongly voiced opposition to it. What is more, nearly all informants had at least some kind of concerns about ICT and pointed out at least a few shortcomings of technology-assisted learning. Whether this is due to cultural discrepancies or differences in the method of implementing ICT into classrooms is not clear and could be the subject of another study.

Comparing the results of this thesis to those of Luik's (2012) report, it can be said that teachers' attitudes have changed slightly. In terms of teachers' concerns, there has been a shift from lack of funding to the quality of ICT tools. It seems that while schools are now equipped with various technological tools, the reliability of hardware and Internet connection could be improved further. Perhaps it is because ICT is seen as a one-time investment and instead of

routine maintenance, computers and other tools are left unattended.

The most noteworthy similarity between the results of this thesis and Luik's (2012) is that in both, Estonian teachers believe ICT to be a supporting element to more traditional methods of teaching. In both cases, lessons were deemed successful if the objectives were met using different methods and not restricting the students to just one learning tool. The persistence of this trend can help schools draft more effective curricula and support teachers in making their lessons more versatile according to preferences.

Overall, while teachers' optimism is not as high as it was 12 years ago, it can be said that teachers are more grounded and have realistic expectations for ICT. The fear of technological failure still prevails, but it seems that teachers themselves are now better trained in the field and thanks to the motivation to learn independently, they are better equipped for unexpected situations in the classroom.

## CONCLUSION

Teachers' attitudes towards ICT are usually left aside, even though the methodology of integrating ICT into education and its effects on students' learning abilities have been under a lot of focus. However, it is important to consider the attitudes, experiences and needs of those people whose professional lives and working environment is changed the most in the process. Ineffectively introduced teaching methods that teachers are unfamiliar with and have trouble using can be costly for the teachers in terms of energy and time, and for the schools in terms of financial funds, if the tools are not used due to them being too unreliable, difficult or time-consuming. This thesis analyzed Estonian teachers' attitudes towards using ICT in language classrooms.

Introducing ICT to education has many benefits, such as increasing student motivation (Ghaznavi et al. 2011), improving their learning results (Houcine 2011; Bhatti 2013) and preparing them for a society primarily dictated by technology (Biminglas 2009; Norris 2001). However, in order to successfully incorporate ICT into their lessons, teachers must overcome many barriers. First, they have to be able to use the tools but in many cases teachers are not provided with efficient training to be proficient with ICT, otherwise their fear of failure may prevent them from using ICT in the first place (BECTA 2004). This may be due to schools' lack of funds, which can also cause problems with the reliability of ICT tools – slow and outdated computers and poor Internet connection cause difficulties for teachers that they may try to avoid by not using ICT at all (Laanpere 2014). Finally, teachers have to specifically make time to create meaningful technology-based tasks for their students (Bingimlas 2009). Often it is easier and faster to use more traditional methods instead, especially if the technology-based tasks have to be created from scratch.

One similar work has been conducted in Estonia before – a report researching teachers'

understanding of and experience with ICT in 2012 (Luik 2012). At that time, teachers in Estonia were overwhelmingly optimistic and positive about using ICT. Their only concerns were related with their own readiness to use ICT in classrooms. In other words, teachers felt that their training might not be enough to confidently use technology in front of their students. Regardless, teachers were excited about tools that could help raise students' motivation and make lessons more interesting. Furthermore, teachers felt that if there was enough support from colleagues, learning a new skill would not be stressful.

Considering the nature of the topic, the content analysis method was chosen for this thesis. To gather meaningful information about teachers' attitudes, 15 semi-structured interviews were conducted with language teachers from various Estonian schools. The interviews were transcribed and thoroughly analyzed to determine recurrences and signal words in the participants' interviews.

The results of the thesis show that teachers are concerned about many aspects of ICT. First, they fear that the equipment at school is unreliable and can fail them at an important moment, which can leave them without a lesson plan. Secondly, lack of support from school in the form of providing technical support and a safe environment for practicing and learning can further undermine teachers' confidence in their abilities. Finally, ineffective organization of training courses limits teachers' opportunities to learn to use ICT in a more meaningful way.

Most teachers have taken numerous courses on ICT and many of them practice some of the things they have learned, but there are those for whom the courses that are offered are not easily accessible. Organizations that hold these courses should consider teachers' schedules and plan their events accordingly. Similarly, some teachers felt that the content presented at the courses is sometimes too difficult to grasp. The courses are intense and fast-paced and many

teachers, especially older ones find it difficult to follow everything. This results in less information being assimilated.

While there are many concerns that need attention, much of teachers' work has also improved thanks to ICT. For instance, it is a great tool for motivating students to learn and increasing their activeness. ICT has also made learning more immediate through open resources and quick feedback options. Each student can learn at their own pace and teachers can keep an eye on students' progress with ease.

What is more, most schools offer great support to teachers in terms of ICT-training, resources and rewards. Even though some schools have less funds to spend on ICT, they support teachers in other ways. Teachers value supportive work environment above cutting-edge technology, so cooperation with colleagues on projects and in everyday situations is more important to them than having access to new fast laptops and other media. Finally, ICT creates a fun environment which helps break away from routine and appeal to students through media that is familiar to them.

Based on the results of this thesis, the author suggests further investigation into the matter. A larger scale inquiry into the effectiveness of ICT training courses is necessary to better understand one of the most prevalent concerns that the participants expressed in their interviews. Furthermore, schools should consider creating a more motivating and supporting environment for the teachers to encourage them to try new methods of teaching. Similarly, depending on the resources, schools could implement a reward system for teachers who show activeness and improvement in working with ICT tools. This can ensure that teachers are motivated to learn new methods and that the expensive tools that schools have purchased find use in lessons. Schools could also encourage teachers to cooperate on projects and share their resources and tips with

one another. Visiting colleagues' lessons to learn about their teaching methods should be promoted, as well as a platform for sharing ideas and concerns about ICT-related topics. Finally, all schools are advised to employ at least one person as the schools' IT-support. This provides another safety net for the teachers, as they can rely on a professional to take care of the equipment at school, keeping it updated and working properly, thus minimizing any unanticipated technical problems, which was another major concern for the teachers.

ICT offers endless possibilities for students to learn and teachers to make their lessons more versatile and effective. By considering teachers' attitudes and adjusting the curriculum and laws accordingly, the educational system can greatly benefit from implementing ICT into classrooms.

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## APPENDIX

	Age groups	School	Location	Frequency	Overall stand on ICT	Stand on smartphones
T1	Older	Public, large	Rural	Very often, "whenever I can"	Very positive	Should use, "I encourage it"
T2	Older	Public, large	Town	Often	Positive	Can use, conditions
T3	Younger	Public, large	Town	Very often	Very positive	Should and can, "in almost every lesson"
T4	Younger	Private	Town	Never	Positive	Do not use
T5	Older	Public	Town	Rarely	Very negative	Very negative, only "selected students" can use them
T6	Older	Public	Town	Rarely	Oblivious, neutral	Can use on conditions, prefers they didn't
T7	Younger	Public	Town	Sometimes	Neutral, positive.	Can use, sometimes.
T8	Younger	Public	Town	Very often	Positive	Should use, "so many options"
T9	Younger	Private	Town	Very often	Positive	Shouldn't use, on silent and put away
T10	Older	Public	Town	Often	Positive	Can use, helpful tools when learning languages
T11	Older	Public	Town	Very often	Very positive	Can and should use, "obviously"
T12	Older	Public	Town	Very often	Very positive	Should use when needed, for certain activities
T13	Younger	Private	Town	Very often	Very positive	Not used, because of an alternative (iPads)
T14	Younger	Private	Town	Very often	Very positive	Not used, because of an alternative (iPads)
T15	Older	Public	Town	Rarely	Neutral	Can use, on conditions

	Types of problems	Stand on ICT and discipline	Rules
T1	Non-technical, problems related with meeting the objectives, lesson goals	ICT does not disrupt discipline	Emphasis on rules, clearly set agreements, “spend a lot of time on class rules”
T2	Technical, internet connection	Might cause excitement	Agreements and rules, but no great emphasis
T3	Technical	Can get out of hand due to excitement	Emphasis on rules, clear agreements, although flexible.
T4	School does not value ICT	Not mentioned	Emphasis on class rules and agreements
T5	Not mentioned	ICT causes problems with discipline	No emphasis on rules, only exceptions
T6	Some technical problems, avoids using technology.	Not mentioned	No emphasis on rules
T7	None, but mentions previous technical problems.	No connection between ICT and discipline	No mention of rules, or not necessary
T8	Nothing has happened yet, but is prepared	May cause excitement	Emphasis on rules
T9	Technical and non-technical, spoiled children, too much technology	May cause problems, but not common in her lessons	Emphasis on rules and agreements
T10	Technical problems, gets irritated and angry, loses patience	ICT does not affect discipline	Not mentioned
T11	Small technical problems	“no, on the contrary!” ICT helps keep order	Not mentioned
T12	Technical problems, mainly with wi-fi	Some activities can lead to chaos, “children lose control”. Determined by the environment	Emphasis on rules
T13	Technical problems, but not afraid of them, knows solutions	May somewhat contribute to lack of discipline	Great emphasis on rules and agreements
T14	Technical problems	Not mentioned	Emphasis on rules and agreements
T15	Technical problems	ICT can disrupt order	Emphasis on rules, assertiveness

	Reason for using ICT	Students' roles	Preparation – time consuming?
T1	Plethora of information, keeping the students busy, attention, effective learning.	Active participant, searching information, mediators and creators.	Not mentioned
T2	Additional stimulus, interesting lessons.	Observers, receivers of information	Not mentioned, not clear
T3	Break from learning, motivating tool, plethora of options, simplicity	Unclear, learners, receivers of information	Takes time, but is worth it
T4	-	Receivers of information, participants	-
T5	Can show “pretty pictures”, likes eKool	Receivers of information	Very time-consuming
T6	Effectiveness in some situations. Students like it, but this is not mentioned as a reason for using ICT	Receivers of information and creators of content	Not mentioned, does not prepare materials
T7	Activating students, participation.	Creators of content, mediators and receivers of information	Time-consuming
T8	Simplicity, activating students, “helps break free from the routine/mudane” “another world”	Creators of content, mediators and receivers of information. Active participants.	Sometimes time-consuming
T9	Change of pace, more interesting for the students, more motivating, “something else”	Receivers of information, sometimes creators of content	Time-consuming
T10	“method of active learning”, everyone is doing something, activated	Various roles, including creators and receivers	Not mentioned
T11	Captivating, fun, “everyone is doing something, because everyone wants to”	Participants in games, receivers of information	Time-consuming, but well worth it in the long run
T12	Versatile, fun	Participants in games, receivers of information	Time-consuming, time-saving in the long run
T13	There is communication between devices, everything is up to date and simplified/clear for the teacher and the students	Creators of content, mediators and receivers of information. Active participants.	Time-consuming when preparing a completely new thing, but worth it in the long run
T14	Makes things interesting, “students are already in that world, makes sense to join them”, exciting, colorful, change.	Creators of content, mediators and receivers of information. Active participants.	Not mentioned
T15	Fast, good alternative to printing worksheets, change of pace.	Receivers of information, learners	Not mentioned

	In-class – time consuming?	Student motivation/activeness	Students' results
T1	Very time-saving, fast, instant.	Very motivated, compared to other methods. Very active.	Cannot say, results do not reflect work with ICT
T2	Goal-oriented, takes time, but is not an issue	Motivated, due to change in pace and activity	Does not affect results, except in “real-life” situations
T3	Time-saving, worth the previous effort	Motivation unchanged, believes it cannot be changed at all	Not mentioned
T4	-	Believes it could affect motivation	-
T5	Not mentioned	Not mentioned	Does not affect results
T6	Very time-saving, digitalized paperwork etc.	Students are more motivated, “only if it doesn’t become the norm”	Does not affect results
T7	Time-consuming	May be more motivated	Does not affect results
T8	Time-saving	ICT increases motivation. “Absolutely!”	Does not affect results or cannot be measured, does not know
T9	Not mentioned, not time-consuming	ICT increases motivation, “definitely, definitely” “I’m all for it”	Cannot compare, thinks results depend on the learner, not the tools
T10	Technical problems may waste time, otherwise not time-consuming	The majority of the students more motivated, some dislike technology	Vocabulary test results have improved thanks to Quizlet, otherwise can’t say
T11	Somewhat time-saving (interactive homework for absent students)	ICT increases motivation	Does not affect results or even disrupts learning, as focus is somewhere else
T12	Time-saving, re-usable	Depends on the tools, students prefer reliable technology, such as the computer class	Improvement in vocabulary tests, thanks to interactive flip cards and exercises. Believes it’s due to immediate feedback (getting “100%”, sound effects etc)
T13	Neither, rather a part of the lesson like anything else. Technical problems can take up time.	ICT has become second nature to the students, sometimes the old-school method is more motivating	Somewhat affects results in vocabulary tests, easier to memorize through game
T14	Not mentioned	ICT affects student motivation, “absolutely”	ICT does not affect results
T15	Time-saving	ICT can increase student motivation temporarily	Not mentioned

	Training and self-learning	Support from school
T1	Courses, workshops. Emphasis on self-learning, discovery and	School organizes and funds courses, provides teachers and students with tools.
T2	Courses in school, takes part actively, does not learn independently, would like to.	Great support from school, lacking in self-initiative to use the resources. Values cooperation among teachers.
T3	Courses, conferences, workshops, mainly self-learning and discovery. Self-initiative, interest in technology and digital tools	Limited, due to resources. Some courses paid for, but mostly independent work and self-reliable.
T4	Courses at university, self-learning and discovery	School does not support ICT, but a more traditional method. Every classroom equipped with a projector and computer.
T5	Some courses, but does not want to go again. Says she is not obliged.	School offers support which she doesn't want to accept.
T6	Some courses, usually does not have time to partake. "if I need something, I will manage"	School offers little support, poorly equipped, evident in teacher's lack of motivation.
T7	Courses, workshops, ideas from others and self-learning, discovery	School offers support, is well equipped and funds teachers' endeavors
T8	Courses at university, mainly self-learning, discovery through googling. Says courses are not always necessary	School supports somewhat, but is financially restricted. However, well-equipped and organizes courses in school.
T9	Numerous courses, in school and outside of school, self-learning thanks to the courses. Finds courses too exhausting, should be more extensive and slower.	Great support from school, well-equipped classrooms, "there's always a way"
T10	Courses in school, self-learning, observing other teachers and cooperating. "Practice is the best way to learn"	Great support from school, very well equipped, courses and other endeavors well funded
T11	Different courses, very often, independent work with programs and apps.	School support is limited, IT-support was made redundant to cut costs, school is poorly equipped and does not fund courses outside the school
T12	Courses, constantly learning. Because of quick developments, teachers should keep themselves up to date and informed. Cooperation with colleagues very important, values teamwork and individual effort	School lacks funds, but supports teachers however possible. Well-equipped classrooms and computer labs, school's own database and means to develop technological competence
T13	Numerous courses, some ongoing, is able to find and analyze information herself, finds that if understanding an app takes more than 10 minutes, it's not worth the effort	Great support from school, emphasis on ICT in school, very well equipped classrooms and both students and teachers get their own devices from the school.
T14	Courses, new skills come automatically, through practice. Also likes to learn independently	Great support from school, emphasis on ICT in school, very well equipped classrooms and both students and teachers get their own devices from the school.
T15	Some courses, rather long ago. Is not confident in her skills, does not want to use ICT too much in class, does not learn skills independently	School offer support and funds courses, is well-equipped. However, courses in school are rare and lack of time does not allow to take courses outside of school

## **RESÜMEE**

TARTU ÜLIKOOL

ANGLISTIKA OSAKOND

**Marlene Timmi**

### **ESTONIAN ENGLISH LANGUAGE TEACHERS' ATTITUDES TOWARDS THE USE OF INFORMATION AND COMMUNICATION TECHNOLOGY IN SECONDARY SCHOOL**

### **EESTI INGLISE KEELE ÕPETAJATE HOIAKUD SEoses INFO- JA KOMMUNIKATSIOONITEHNOLOOGIA KASUTAMISEGA PÕHIKOOLIS**

Magistritöö

2017

Lehekülgede arv: 56

Annotatsioon:

Info- ja kommunikatsioonitehnoloogia (IKT) muutmine haridussüsteemi lahutamatuks osaks toob kaasa muutusi, mis mõjutavad nii õpilasi kui õpetajaid, kes peavad arenevas keskkonnas kiiresti kohanema. Tihtipeale jääb õpetajate arvamus selles osas kuulmata. See uurimus keskendub Eesti koolide võõrkeeleõpetajate hoiakutele ja kogemustele seoses IKT kasutamise, et välja tuua süsteemi puudused ja tugevused õpetajate seisukohast.

Esimene pool tööst annab ülevaate IKT kasulikkusest keeletundides, takistustest, millega õpetaja võib IKT-d kasutades kokku puutuda ja varasematest uurimustest sel teemal nii välismaal kui Eestis. Töö empiiriline osa tutvustab uurimismetoodikat, esitleb tulemusi ja analüüsib neid varasemate uurimuste taustal.

Uurimuse tulemustest selgus, et õpetajate suurimad hirmud seoses IKT-ga tulenevad nende väljaõppes alal ja koolides kättesaadava tehnika kvaliteedist. Samas usuvad õpetajad, et IKT on suurepärase vahend õpilaste motivatsiooni ja aktiivsuse suurendamiseks. Et sellest veelgi rohkem kasu saada, võiks õpetajate hinnangul olla koolituste sisu konkreetsem ning tempo aeglasem. Üle kõige ootavad õpetajad aga suuremat toetust oma koolilt ja kolleegidelt ning seda, et IKT vahendid oleksid kaasaegsed, hooldatud ja kergesti kasutatavad.

Märksõnad: INFO- JA KOMMUNIKATSIOONITEHNOLOOGIA, IKT, HARIDUS, VÕÕRKEELEÕPETAJAD

## **Lihtlitsents lõputöö reprodutseerimiseks ja lõputöö üldsusele kättesaadavaks tegemiseks**

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INFORMATION AND COMMUNICATION TECHNOLOGY IN SECONDARY SCHOOL

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