# THE ROLE OF ICT IN PRIMARY EDUCATION:
# Pupils' views about iPad-oriented oral communication tasks in English lessons
# (5th grade)

Master's thesis
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English
April 2014

**JYVÄSKYLÄN YLIOPISTO**

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|---|---|
| Tiedekunta – Faculty<br>HUMANISTINEN TIEDEKUNTA | Laitos – Department<br>KIELTEN LAITOS |
| Tekijä – Author<br>TERVO ANETTE | |
| Työn nimi – Title<br>THE ROLE OF ICT IN PRIMARY EDUCATION:<br>Pupils' views about iPad-oriented oral communication tasks in English lessons (5th grade) | |
| Oppiaine – Subject<br>ENGLANNIN KIELI | Työn laji – Level<br>PRO GRADU – TUTKIELMA |
| Aika – Month and year<br>HUHTIKUU 2014 | Sivumäärä – Number of pages<br>130 + 5 LIITETTÄ |


Tiivistelmä – Abstract

Tämä tutkimus käsittelee tietotekniikan roolia alakoulun opetuksessa oppilaan näkökulmasta. Tällä hetkellä alakoulua käyvät oppilaat kuuluvat uuteen, teknologiaorientoituneeseen sukupolveen, ja tämän vuoksi tutkimuksen yhtenä oletuksena oli, että oppilailla olisi näkemyksiä aiheesta. Tutkimuksen tarkoituksena on kartoittaa, kuinka tietotekniikkaa on hyödynnetty ja kuinka sitä voi käyttää luokkahuoneessa sekä lisäksi selvittää oppilaiden ajatuksia ja toiveita siihen liittyen. Esimerkkitapauksena tutkimuksessa käsitellään alakoulun viidennen luokan englannin tunteja ja niillä opetuksessa käytettävää iPad-tablettitietokonetta. Tutkimuksen keskeiset teemat ovat alakoulun opetus, opetusteknologian hyödyntäminen sekä suullisen kielitaidon harjoittaminen.

Tutkimuksen aineisto kerättiin videoimalla oppitunteja ja oppilaiden ryhmähaastattelulla. Tutkimus on luonteeltaan laadullinen, ja tavoitteet ovat sen mukaiset: selventää tutkittavaa ilmiötä tutkittavien henkilöiden näkökulmasta. Tutkimukseen osallistui yksi alakoulun englannin kielen opettaja ja hänen viidennen vuosiluokan ryhmänsä, jossa on 18 oppilasta. Ryhmästä tarkkailtiin lisäksi kuutta oppilasta tarkemmin, ja he osallistuivat myös oppituntien videoimisen jälkeen toteutettuun ryhmähaastatteluun.

Tuloksissa oppilaiden näkökulmat ja mielipiteet iPadien käytöstä oppitunneilla olivat suurimmaksi osaksi myönteisiä ja rakentavia. Oppilailla oli tunneilla motivaatiota ja innostusta laitteen käyttämiseen, ja he osoittivat panostusta ongelmanratkaisu- ja yhteistyötilanteisiin sekä keskittymistä itsenäiseen työskentelyyn. Haastattelussa oppilaat kertoivat olleensa tyytyväisiä oppitunteihin, mutta toivoivat tulevaisuudessa enemmän aikaa iPadien käyttöön.

Tutkimuksen tulokset osoittavat, että oppilaiden mielestä tietotekniikan hyödyntäminen opetuksessa on mielekästä ja sitä saisi tulevaisuudessa olla enemmän. Opettajan roolilla on suuri vaikutus laitteiden käyttöön ja tehtävien laatuun, ja oppilaat odottavatkin panostusta ja kiinnostusta aiheeseen myös opettajalta. Tulosten perusteella voidaan todeta, että alakoulun viidennen luokan oppilaat ovat taipuvaisia ja taitavia teknologian käytössä. iPadit mahdollistavat paitsi oppilaiden yhteistyön lisääntymisen oppitunneilla myös luokan ilmapiirissä kehittyvän, innostavan, keskittyneen ja oma-aloitteisen oppimistilanteen, joka heijastuu myös oppilaiden asenteisiin. Jatkotutkimuksena samasta aiheesta voisi tehdä pitkäaikaisempia ja aineistoltaan laajempia tutkimuksia.



Asiasanat – Keywords IPAD, EDUCATIONAL TECHNOLOGY, BASIC EDUCATION, FOREIGN LANGUAGE LEARNING, ORAL COMMUNICATION

Säilytyspaikka – Depository KIELTEN LAITOS

Muita tietoja – Additional information

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# 1 INTRODUCTION

The aptitude and skills that my three-year-old god-daughter shows when using a tablet computer and its icons fluently, reflects strongly to the nature of the latest generation's learners. The pupils now in Finnish elementary school and the future learners starting their educational career, have all been born in the 21st century, to the world where technology prospers. The pace of the technological development is at the level that the amount, quality and type of the devices the future generations will invent and use can only be speculated. Currently the topic at-hand in the field of technology in education is mobile technology and how the portable, handheld devices, which the majority of pupils use effortlessly outside school, can be used in teaching and learning. Mobile technology relies on the following key elements: mobility and wireless connectivity. These portable devices filled with embedded technology have become ubiquitous in the society.

Countless equipment are released to the market constantly and the pace of technological achievements is remarkable. However, the life-span of the devices and their models can be short and perhaps due to that reason the educational world has been careful with the intake of different devices. Nonetheless, the newest purchases made by schools include one of the most popular devices designed in the field of mobile technology: a tablet computer. A tablet computer is a mobile, small, personal device, and is promoted as a simple and suitable device for everyday use for a modern citizen. A tablet computer does not carry or require anything unnecessary with it, not physically or operationally. These *tablets* are now in their path to be integrated into education and ways of utilizing them for educational purposes is being explored and examined: for instance, publishers are releasing applications for tablet computers with contents supporting their printed teaching material.

As the topic of mobile technology in education is overall a current matter, conducting a research on the topic seemed motivating. Research has mostly been done abroad and national studies conducted in Finland are still rare. Research on various of aspects concerning educational technology has been conducted during the past two decades, after the rise of mobile technology, for instance a case study of a Finnish primary school's use of information and communication technology (ICT), as a part of a cross-cultural project *STEPS*, committed by the European Commission (STEPS 2007), but still there is not a lot of research on the matter from more detailed point of views. Nummenmaa, for example, (2012) has studied the contemporary state of distance learning, whereas

Mikkonen, Vähähyyppä and Kankaanranta (2012b) examine the nature of contemporary learning environments. Sipilä (2013), on the other hand, presents a broader research with five empirical studies discussing the role of ICT in Finnish basic education. However, as the phenomena of mobile technology and learning are new in Finnish education, the research on them is still in its infancy. Especially studies providing practical implications about the utilization of ICT are rare and needed, as the process of ICT integration into schools is a relevant issue in today's Finnish schooling.

The present study's aim is to describe the overall atmosphere in and nature of learning situations that can be created and conducted with the use of ICT in an elementary school level, and discuss what the pupils themselves think and feel about them. The present study discusses the role of ICT in education from two aspects: the development of classroom's technical infrastructure and the role of ICT in primary education. The data was collected in two ways: video recording three lessons and conducting a group interview with six pupils. Alongside the two main themes, according to the data collected, examples will be presented from the point of view of English lessons in elementary school and the utilized device is a tablet computer iPad. Hence, the emphasis will be more in classroom-based learning than, for example, distance learning (e-learning), which might come to mind first when talking about technology in schooling. Furthermore, the perspective behind the present study is the position of the pupils and their user experiences and expectations. Therefore, the aspect of teaching and the point of view of the teacher is not an enhanced topic of the present study. The study focuses on one, coherent perspective effectively and therefore, offers relevant and valid data in the research field of educational ICT.

The theoretical framework, which consists of ICT's history in education, English language and oral communication, and ICT in elementary school, are discussed in chapters 2, 3 and 4. Chapter 2 briefly goes through the history of ICT in education exploring the changes occurred during the last four decades in the classroom's technical infrastructure. Chapter 3 examines the theme of the national policy to the issue of ICT in education in Finland: the national core curriculum and other official publications. The fourth chapter addresses and discusses the main aspects of the study: mobile-technology in primary education, and English oral communication and ICT. Chapter 5 presents the methodological framework of the present study, with research questions and methods used in both data collection and analysis. The data analysis and findings are examined more thoroughly in chapter 6. Summarizing discussion will follow in chapter 7, and conclusions and implications of the findings as the final chapter 8.

# 2 FROM STATIONARY TO HANDHELDS: A BRIEF HISTORY OF ICT IN EDUCATION

There is an on-going debate on why should and how could new technology replace the traditional pen and paper – arrangement in learning. On one hand, the debate is relevant because arguably the most challenging issue of integrating educational technology into the classroom is recognizing and developing the required pedagogy behind it (D'Angelo and Woosley 2007). On the other hand, the debate's setting is outdated as the existence of ICT in education is inevitable and comparing it to the *good old days* is questionably no longer useful. The ways of using technology in education could be a topic for argumentation but instead of debating the issue, it ought to be actively studied.

How it all started and how have we ended up here, will be discussed in the following sections: what kind of devices were invented and accepted as a part of school-life, how the integration of different technologies into the classrooms changed the settings of the learning situations, and how did technology affect the topics of academic research in education. This chapter covers briefly the milestones of technological establishments in schools and classrooms, from the appearance of the first stationary computers to the revolution of modern, portable mobile devices. The chapter also introduces and discusses one of the main themes of the present study, which is the advantages and disadvantages of using technology in the classroom. The previous studies and theories presented in the following sections have been collected with an international viewpoint in mind and will provide a general view of the history of ICT in education. The reason for this is that a broader review of the topic, instead of referring to it nationally, gives a broader sense of the developments and achievements made in the field during the past four decades. However, on the contrary, the following chapters 3, 4 and 5 will present a more Finnish-focused point of view.

## *2.1 Key concepts*

Before proceeding, a few basic definitions might be helpful in order to continue to the following sections. The present study consists of three main themes: technology in education, English language and oral communication, and iPads used in educational purposes in primary education. Within these themes several key concepts of the present study will be discussed and all of them will be dealt with firstly in this section.

The technological approach of the present study is focused on and examined by using the term **information and communication technology (ICT)**, which is closely linked to **information technology (IT**). To clarify the difference of these two concepts, **IT** is an older term which has been used mostly when referring to the whole industry of computing: computers, software and networking, and it is mainly used in the business world. **ICT,** then again**,** is used in the field of education and refers to the means of ICT used in aiding individuals, groups or institutions to manage information. In other words, ICT, which is used when referring to the academic world, is an extended synonym for IT, which refers to the whole industry that uses computers and other equipment to operate information. When discussing ICT's role in education, it usually refers to one of two scenarios: the teacher utilizing ICT as a planning and organizing tool, or utilizing ICT broadly in classroom situations, latter of which will be the angle of the present study. The term **technology**¸ then again, is used to refer to all electronic equipment and ways of telecommunication. Moreover, when referring to technology used in a classroom, it can mean a single device or a group of devices operating similarly. Also, as the context of the study is education, the definition refers to devices used in learning and teaching situations, including for example computers, mobile-devices, cameras, scanners and calculators (Ficklen and Muscara 2001).

Secondly, some devices and approaches which are in the focus in the present study are helpful to bring up here already. The term **tablet computer** is an example of a handheld device and is used to refer to mobile apparatuses with a touchscreen technology. However, it requires to be mentioned that different manufacturers' tablet computers are equipped with different operating systems and therefore, every tablet computer is different to use from the other, for example Android devices, Windows devices and Apple devices. The present study's examines an Apple device, the tablet computer iPad. Then again, **interactive whiteboards (IWBs**), the second newest trend in educational technology, are whiteboards equipped with advanced touchscreen technology. IWBs are still making their way into classrooms and usually are not yet listed as a common device in an adequate classroom. Additionally, the most relevant theoretical approach for the study is **Mobile-assisted language learning (MALL)**, which is a new dimension of its older version, umbrella approach **CALL** (**Computer-assisted language learning**, see more Mioduser, Tur-Kaspa and Leitner 2000).

Finally, the English language will be approached from a narrower perspective: elementary school-level English and more specifically **oral communication** in English. Therefore, every reference to English, without any further clarification, can be linked to **primary education**, which is attended in Finland from the age 6-7 to 11-12. Nonetheless, the aspect, especially in the data analysis, is the oral communication as a language skill, and the other three: writing, listening and reading, are not dealt with in detail in the present study's theoretical background. The study initiates by introducing the history of ICT in education in section 2.2.

## *2.2 The beginning - Computers: friend or foe?*

Today's pupils in Finnish primary education have only heard about the time without the Internet. The future generation after them perhaps will no longer understand that every screen has not always been touchable and operative with swift finger-movements and gestures. Computers and other devices have integrated into the everyday-life of the 21st century people. However, the concept of **computer**, one of the major technological achievements so far, has become vague for the generations today. We do not see how much nowadays functions with a processor and how manual functions are lessening with each new device, for example in smartphones, which are similarly handheld versions of *computers*. A computer calls to mind, to most people, the PC (personal computer) with its screen, mouse and processor. Yet, computers are the core to the most devices people use and rely on in their everyday-life; computers are used from toys and MP3 players to industrial robots. Ever since the invention of the first versions of computers, over a hundred years ago, they have been a part of the upswing of technological achievements and other phenomena, as in the introduction of the World Wide Web (WWW) in 1991, and have influenced the growth of today's information society.

The era the world is living at the moment is called the era of *Digital-age*, *Information Age*, *Computer Age* or *New Media Age* (Castells 2011), and the journey here has been rapid. The first studies relating to the topic of technology in education dealt with the issue of the nature of the new development - were computers in schools and classrooms a good thing or a bad one? In 1972 a Harvard University PhD. Roger E. Levien (see more Levien 1972) published an extensive piece about the instructional use of computers and also included the history of computer in it but as the era of computers was at its beginning-stage at the time, the book became outdated in a heartbeat (Rabin 1973: 71). This reflects well the fast pace of development. The first computers for general use were introduced in

the 1970's and from there on the pace of technological developments has only increased. The 1970's studies dealt mostly with computers in education in general and mostly from higher education's side (see more Rabin 1973, Salomon and Clark 1977). Salomon and Clark (1977) review in their paper the methodology used in the media related studies in the 1970's. The three most common approaches for studies were instructional use, psychological effects on learners and the effects of, for example technology to the practice of education (Salomon and Clark 1977: 100). Their result is that most of the studies at that time aimed too high and ultimately achieved little.

The decade from 1970's to 1980's was the time when criticism with reasoning, after a decade of general research, arose. Beynon and Mackay, for instance, argue that as every movement or change in the field of education, even changing from fountain pens to a new model of ballpoint pens has been challenged or debated about, how come the rise of microcomputers and IT in general was accepted without argue (Beynon and Mackay 1989). Also, in addition to criticism, the outlook of the studies in the 1980's shifted from the perception of the general nature of IT in schools towards the teacher's competence and the support available concerning the use of IT. Sheingold and Hadley (1990) executed a major survey nationwide in the United States about teachers' successful integration of computers into classroom and resulted in arguing that the new challenge of integration, brought by technology is achievable. The survey was based on the answers of 608 teachers, who were teaching from grades 4 to 12, and who completed the whole 16-pages-long questionnaire. The results were that in order to achieve an accomplished use of IT in a classroom the teacher must be interested in it and willing to educate oneself, there must also be institutional support provided, and the teacher should use experimental methods in the classroom and be ready the expect more and more from his/her students. (Sheingold and Hadley 1990)

Nonetheless, amongst the criticism, an article collection with a different approach was published in 1988, speculating the future of IT in American education. The purpose of the collection was to argue that the role of IT would increase and have an effect on the ways of teaching and learning known during that time. The collection included articles of 13 authors discussing the topic from several perspectives with one common factor: the decade dealt with in the texts is the year 2020 - the *Not-Distant Future* (Nickerson 1988). The group of these 13 individuals, who all shared the belief that IT was there to stay and would have a strong influence on education in the future, formed a panel called *the 2020 panel*. The panel was gathered by the Educational Technology Centre of the Harvard

Graduate School of Education, and it included authors and researchers of that time. Together they were instructed to consider the role of IT in a long-term future in education in the U.S. and they formed an arguably coherent collection of their visions. The panel was also officially sponsored, for example by the U.S. Department of Education.

The panel's main vision was that a new generation of technology was already gradually but surely developing and therefore, also knew that the target date of the year 2020 would actually be a relatively short period when discussing their topic. The panel published an edited book in 1988 combining their vision of seeing the role of IT in American education in 2020. (See for further information Nickerson and Zodhiates 1988). This piece would be interesting to compare to the new Finnish National Core Curriculum, which is intended to be published in 2016, and see if the contents of the NCC support or collide with the 2020-panel's visions. Nickerson (1988), for instance, examines the topic from the viewpoint of learning and in his article lists themes, when considering the role of IT in the future and some of them are still valid today: constructivism, the importance of conceptual understanding (why something works as it works), the importance of connecting in-school and out-of-school learning, emphasis on meta cognition and self-management techniques, and the need for lifelong learning (Nickerson 1988: 7-8). Also, *remote wireless terminals* and links between networks were also on the list of assumptions of trends and items in the technological future (Malcom 1988), which have indeed actualized: the WWW being one and perhaps the most evident proof. The revolution of communication elicited by the introduction of the WWW is discussed in the following section in more detail.

## *2.3 The effect of the World Wide Web on ICT*

The phenomenon of the WWW (the W3 or the Internet) in 1990 revolutionized the possibilities for new technology and new ways of communication - for laymen as well as for institutions. The WWW expanded rapidly and the use of the system was established quickly as a part of the world and therefore, could be arguable considered to be one of the most significant achievements of IT in history. The W3, one of the most defining happenings of the 1990's, is an accomplishment achieved by a British computer-scientist Tim Berner-Lee in 1991. No-one could have predicted what Berner-Lee would achieve with the W3 or what it would mean for the future of ICT – it has changed the ways and pace of communication.

Then again, a problem of simplification lies here as well as when understanding the concept of computer: the introduction of the Internet does not equal the invention of *internet*. Both of these concepts, the computer and the internet, have integrated into the everyday-life and speech so well that there is no need to apply oneself to understanding them if one knows how to use them and there lies no further interest towards them. Hence, in the present study both the terms *Internet* and *WWW* will be used when referring to the use of an internet and web pages. Nevertheless, as Berner-Lee's invention is referred to with the same term as the system it was built to operate on, the internet, it can therefore cause misperceptions. However, an internet and the Internet are two different issues: an internet is a base where for example the WWW can function, and without the WWW internets or internetworks still exist and information can be transferred across them but through different systems and protocols than within the WWW. The WWW is, in short, a system, which works as a result of hypertext documents linked to each other with hyperlinks. (Berner-Lee and Fischetti 1999). As the aim of the study does not rely on these concepts, both the concepts of the Internet and a variety of the term referring to the WWW will be used similarly to refer to Berner-Lee's W3.

How the revolution of the WWW affected the field of education can be seen as the method of **e-learning**, a form of distance learning that developed and its use began to increase in the 1990's. The rudimentary elements of distance learning can be traced to as early as the 1800's but the first international institution to organise distance learning through letter exchange was found in 1983. (Moore and Thompson 1990, as quoted in Nummenmaa 2012: 20). The core idea behind distance learning, as in e-learning, is to be able to provide teaching in situations when it is not possible face-to-face and the aim is to find the most suitable way of doing it. Another aim is to create and provide the best possible instructional contents to those of participating in distance learning - regardless of the whereabouts of the learners. (Nummenmaa 2012) Technological inventions developed the ways to conduct distance learning and, for example, the WWW has changed the pace of it and e-learning was formed.

However, distance learning has faced criticism as well and Bates (1990), for instance argues against the future of tele-education and claims that technology is something that could easily run everyone over and especially educators who cannot keep up. Bates (1990) briefly summarizes the history of distance education in his article: first generation was correspondence teaching with a tutor, then multi-media distance education, with one-way media and two-way interaction, both still with a tutor, and the latest third generation form

is tele-education, with one-to-many possibilities and also two-way interaction through media. Even though Bates argued against the new forms of distance learning, the third generation form has survived and the current distance learning forms, as e-learning, have correspondingly the same main aims as the 1990's versions. E-learning method began to utilize the Internet as it was discovered, and the distance teaching and learning method started to develop in the 1990's with first web-based courses. Distance learning and the forms of it are an area that reflect the developments of ICT well when compared to the forms of contemporary, possible distance learning methods: for example online lessons or examinations in real time.

Additionally, multiple learning and teaching theories relating to the use of technology were introduced before the turn of the century, for example the theories of Computer-Assisted Language Learning (CALL) (see more Levy 1997) and Computer-Assisted Collaborative Learning (CACL) (see Koschmann 1996). These theories and the studies' results were still relevant for over the turn of the century but in the past ten years the pendulum has shifted again and it seems that the newest achievement of technology, mobile technology, is here to stay. The following section will describe the current situation of trends and alignments of educational ICT.

## *2.4 The current trend: mobility and diversity*

After the excitement and also struggle of accepting this new aspect in technology, the WWW, and trying to integrate it into the field of education, the development moved yet again to a new level in the 2000's. The 2020 panel predicted the development of portable devices already in 1988 (Nickerson and Zodhiates 1988) and today the technology to produce the described devices exists. The device-contemplation and implementation has become even more rapid and new devices are coming to the market continually. Today the devices are small and portable, and the selection is vast – correspondingly to what a member of the 2020 panel, Malcom, (1988: 255) described the future devices to be: *purse-size computers* which will be used in leisure time to enrich senses and aid learning. More recently, Traxler (2009) examines the nature of *mobile learning* as a modern product that has developed alongside the mobile technology and numerous new mobile devices. Traxler still argues that mobile learning is not yet distinguished enough in order to anyone to actually know what it is. Nonetheless, Traxler lists the devices and technologies: *mobile and wireless technologies, including handheld computers, personal digital assistants (PDAs), camera-phones, smartphones, graphic calculators, personal response systems*

*(PRSs), games consoles, and personal media players,* which have affected this mobile learning entity's development and admits that they are becoming an undeniable part of modern individual's daily routine (Traxler 2009: 2).

The idea of learning environment has also changed with the new technology and generations, and contemporary conception of it is arguably different than the ones formed in the past. A learning environment should be understood widely: it can, for example, refer to places, spaces, communities, technical infrastructure, and methods in teaching. A publication by the Finnish Ministry of Education and Culture, describing a future vision of ICT- use in education emphasizes that with contemporary mobile technology the aspect of mobility should also be included in the concept of learning environment. With mobile devices learning environment is no longer stationary but can be always with the learner. One device can, for example, provide the learner with a camera, communication channels, tools to take notes with, and the possibility of searching for information, browsing. (See more Koulutuksen tietoyhteiskuntakehittäminen 2020 2010)

Moreover, to be able to understand the current state of the ICT used in a learning environment one must get a picture of the whole technical infrastructure that can exist. First of all, issues of which the infrastructure of a classroom consists of are the devices and wires inside the classroom but also the connections and wireless support outside it. A study lists the following items to build-up a classroom's technical infrastructure: building wiring, computers, peripherals, network, LAN-connector and wireless system (Ficklen and Muscara 2001: 22). Ficklen and Muscara also link the existing hardware, which basically mean the variety of devices, closely to the infrastructure. Today's top-notch classroom, for instance, can have a teacher's PC, a projector or two (separate or for example IWB-integrated), an IWB, a portable laptop- trolley, a portable tablet computer - trolley, separate PCs for student-use, headphones, a document camera, a TV and a VCR (rare), all operating through wireless connections, the most of which could be linked to each other through for example cloud services. Hence, the need for a separate IT classroom is a sidestepping trend in today's educational institutions. These devices and connections will be discussed in more detail in the next section, which covers an aspect of ICT as an embedded tool in education. Lastly, Ficklen and Muscara (2001) summarize well the means for a successful, long-term involvement of making technology as an integral part of the learning environment, in which these five aspects ought to be taken into consideration equally: infrastructure and hardware, software, professional development, maintenance and long-term support.

Bossert (1988), on the other hand, was a part of the 2020-panel and discusses the infrastructure of a future classroom also in his article. Bossert visions an *In Touch Classroom* which would enable the class to make a field trip to a museum or a library by the push of a button: online (Bossert 1988: 277). Bossert describes multiple portable devices, including a student-kit with a high-resolution colour LCD display and so forth. Bossert (1988) predicts there to be less costs with everything to do with the infrastructure and therefore the advances made would be possible: better connections, more devices and the possibilities to external connections. Bossert's prospects are not that far away from the truth and a lot of the key elements he describes can be found today in some forms in a classroom.

As discussed above, most of the theories and studies formed and reviewed at the end of the 20th century are still relevant today. Though, mobile technology has brought its counterparts to them and for example a wide range approaches as in CALL, are not used as much anymore but MALL has formed in its place as a more accurate approach. However, one must remember that the computer is more than the PC and a computer runs the mobile devices as well, but nevertheless, CALL needed an update, which MALL enabled. MALL will be dealt with furthermore in chapter 4.3. The next section, then again, describes the existing devices and specific ways of applying technology in a classroom and other learning environments.

## *2.5 Embedded ICT in learning environments and situations*

A modern, top-equipped classroom was described above and here the equipment (hardware), which are a part of the classroom's technical infrastructure, will be discussed in more detail. The aim of bringing technology into the classroom is to aid the education taking place there. For instance, to mention a few educational features of different devices: the computer is the core to the infrastructure, an IWB can involve pupils more, a document camera facilitates functioning, whereas tablet computers can diversify lessons and a projector enables focusing everyone's attention to a mutual, certain matter at the same time. Nonetheless, even if the present study discusses ICT as *a tool* in education, the overall approach is that that tool would be *a part* of the complete learning situation and process and not *an addition* to otherwise coherent learning situation.

The teacher’s desk computer can be treated as the base of the classroom technical infrastructure’s hardware because one should be found in any modern-day classroom; the computer is the compulsory main device for the other devices, **peripherals** to exist and

operate. A teacher usually possesses a personal work laptop, in addition to the classroom's PC or MAC, and a computer or a laptop are the most probable devices to be used daily, by the teacher or the pupils in general as well (STEPS: Executive summary 2007: 4). In the teacher's personal use a computer usually provides the access to searching information when needed, updating the teacher's web page where the pupils' homework, in addition to other relative material, can be posted, and for instance, accessing different web-based **virtual learning environments (VLEs)**. Accordingly, a long-term study *STEPS: The Study of the Impact of Technology in Primary Schools*, conducted by the European Commission and involving over 18 000 European primary school teachers, reports that 75% of teachers find the use of computers in the classroom a positive issue. However, the use is reported to be more in the outside of the lessons and not as a fully-integrated part of the teaching. (STEPS: Executive summary 2007: 5*)* Nonetheless, nowadays also iPads or tablet computers in general are becoming common and replacing laptops as personal devices for the teachers. Nonetheless, a list of possible devices and their utilization possibilities in the learning environment are examined next.

An up-to-date classroom can have **an interactive whiteboard**, for instance a *SmartBoard* (Smart Technologies 2014) or a *Promethean ActivBoard* (Promethean 2014), functioning as a screen in the classroom. An IWB is a canvas with a touchscreen supported technology and it can function as an interactive screen by running its own software, or as a touchable canvas to which other sources' data is projected to, for example the screen of a desktop computer or an attached iPad. An IWB consists of three components: an interactive, touchable screen, a projector and a computer. An IWB is used by touching the screen's surface with a finger or a stylus (a pen-like device designed for the device), or operating it through the computer's keyboard. (Edu.fi). An IWB usually comes with a brand-designated software so within limits of each software and the teacher can then download the software's ready material packages online in any subject and utilize them in teaching, or the teacher can also create own materials to be used with pupils (Smart Technologies 2014, Promethean 2014). Usually a teacher quickly assembles their own material entities to use, consisting both their own material as well as ready material (Edu.fi). All the tools and templates are there, only creativity is the limit.

**A document camera** is a modern version, an update of an overhead projector, with the technology to project the surface from multiple sources: the computer screen or the input of an attached source. Basically a document camera, or a visual presenter, is an image capture device, which captures the image presented to it in real-time. Everything showed

under the camera is displayed in the connected screen or IWB, which is practically a screen as well (Smart Technologies 2014). **A docucam** can facilitate everyday functions in a classroom and for instance, help save time in displaying-related issues, for example before handing out printed material to pupils, the teacher can show the hand-out under the docucam and everyone can see it on the screen while the teacher goes through the structure of the hand-out. This technology saves time in the lesson as it eases the instructing compared to for example lifting the paper up in the air and pointing at it at the same time when instructing and still needing to repeat the instructions when the pupils receive their copies, or having the hassle of first handing out the papers and then gaining everyone's attention for the instructions.

**A projector**, then again, functions as a portal to the data of all the devices which are projected to the screen. The projector, for example projects the inputs of the sources attached to a document camera to the screen, which can be a canvas or also an IWB. The instructions in the English lessons, in which the present study's data was gathered, were given by connecting the teacher's personal iPad to a document camera and demonstrating the task to be performed by operating the attached iPad as its screen was projected to the IWB's canvas. The only disadvantage in connecting the iPad to the document camera was that the hand movements did not show on the screen as the device was attached to the docucam and therefore, the teacher had to first point to the icon to be pressed first on the canvas and then move back to operate the device. On the other hand, if the iPad would have been placed under the document camera's lens, the handing of the tablet computer could have been clearer but then again, the functions happening on the iPad's screen might have been too blurry to see. Nonetheless, the visual factor in teaching and learning is enabled through the projector. Functions that a common projector has as in *freeze* and *hide* are useful in teaching situations as well. A projector can nowadays be counted as a part of a regular classroom's equipment.

**Tablet computers** are the latest trend in educational technology. *A tablet* can be seen as a kind of a hybrid of a computer and a smartphone (a mobile phone with advanced features): a tablet, as in an iPad, does not replace a computer or work as an advanced version of a smartphone but finds its place somewhere in between (Kainulainen and Kilpiä 2012). Tablet computers function through an operating system that runs applications, instead of programs like computers. A tablet computer is a small, portable device, which resembles a book in shape, and one side of the device, or one of the covers, is a touchscreen. A tablet computer does not have any peripherals as a standard but for

example attachable keyboards and styluses are available in the market. Using tablet computers in learning situations, as in iPads, has been studied to have a positive effect on learning results (Clements and Sarama 2003). As the IWBs enable to gain the whole group's attention and direct it to the same matter simultaneously, for example reading and repeating words from the screen, tablet computers today are an option when individual learning is required instead of chorus answers from the group (Redington Bennett 2011). Tablet computers can also be used in pairs and groups, depending on the learning aim.

These above mentioned devices can function as aiding tools for the teacher in the classroom, which is correspondingly the most common function for the devices. In other words the technical devices function, for instance as instruction tools when they are utilized in giving instructions to pupils (Lim and Tay 2003). Though, depending on the teaching and learning aims, ICT's role can differ in the classroom and both the teacher and the pupils should be utilizing and using the devices, instead of solely the teacher. Nevertheless, no matter how or why ICT is used, when used well in the classroom, ICT can enhance pupils learning (UNESCO IITE 2012). One possible classification of applying ICT is based on how ICT is used as a tool in the classroom and it is formed by four distinctive tool categories: information tool, situating tool, construction tool or communication tool (Lim and Tay 2003). When information is provided via multiple of sources as in audio format and video format, for example in the WWW, ICT is then used as **an information tool.** Searching information online belongs to this category as well as the aforementioned instructing by the teacher. Then again, using a studio or providing an environment where pupils can experience happenings, for example playing games, ICT works as **a situating tool**. This category includes the freedom of pupils making their own choices in situations.

Thirdly, ICT to work as **a construction tool** requires an application or environment where pupils can organise their own interpretations or visions of a subject and also communicate and share them with others. These could be for example different social networking applications and applications with which pupils create visual products of their ideas, for example mind-maps. Lastly, ICT can work effectively as **a communication tool** between the teacher and the pupil, more specifically outside the boundaries of the classroom: via e-mail and different e-discussion boards. (Lim and Tay 2003) However, these aspects should not be comprehended as additional elements in learning but as implements which cannot be separated from the situations without altering them completely.

Additionally, a cross-cultural study, conducted as a part of the project *STEPS* (STEPS 2007), shows that when the integration of ICT is not successful, teachers can adapt an attitude that ICT is just **an entertainment tool**. This perspective indicates well the possible, additional element that ICT can be in teaching and learning, which is not a desirable aim of utilization and integration. At this point everything else has been tried and used and good practises of applying ICT has not been found or then again, the teacher has simply decided from the start not to learn to how to utilize ICT. (Kaisto 2007, as quoted in STEPS: Literature review analysis 2007: 19). Furthermore, another approach to the idea of ICT used as a tool is to change the characteristics of the tool-categories into types of learning activities (Barron et al. 2003, as quoted in Hsu 2011: 848). The four types of tools that Barron describes would then equal to the ones mentioned above by Lim and Tay (2003), and in types of activities they are: *researching tasks* (information tool), *problem-solving tasks* (situating tool), *productive tasks* (construction tool) and *communication tasks* (communication tool). These task types and approaches will be discussed more in the data analysis section when the task performed in the data collection lessons will be examined. Technology and its utilization practises have not been the only issues under development in the few past decades but the learners as well have changed. The latest generation, the digital natives will be introduced in the following section.

## *2.6 The new generation of learners*

For decades every generation has been named in the western world and the generation being born currently is called the Generation Z. The Z's predecessor was the Generation Y, born about from late 1970's to the early 2000’s, and therefore also known as the millennial generation or **millennials**, and its predecessor, the Generation X, born from late 1950's to the late 1970's. Each generation have characteristics and can be labelled or described by certain features: for example that generation X saw and lived through economic downturns with hard work, and generation Y, then again, was born after these uncertainties to a better, more family-focused than survival-focused world. Furthermore, generation Y is considered as the first generation to having had technology as a part of their lives (Thielfoldt and Scheef 2004).

Technology is likewise the issue that characterizes the current generation, generation Z, as their unofficial names are for example **net generation, netizens** and **digital natives** (Moody and Bobic 2011). Already late millennials and also the netizens have grown up with technology and are adapted differently than their previous generations in having and

using IT. A study by Moody and Bobic deals with the academic success of the netizens and the learning problems they have had in the university level, even though they should be the smartest generation to teach after growing up in a technology-centred society. However, in this study a netizen is a late millennial, as the timeframes of each generation can slightly vary according to the sources used in the studies. Nonetheless, the findings are that by the time that a netizen turns 21 years old, he/she has spent tens of thousands of hours with technology: 10,000 hours playing video games, 200,000 hours on e-mail, 20,000 hours watching TV, 10,000 hours on cell phones, and under 5,000 hours reading (Bonamici et al. 2005). However, the study by Moody and Bobic was conducted in an era before the rise of mobile technology and therefore, the numbers more likely refer to the generation Y. However, the implication is still relevant as the numbers of the statistics presumably would have only increased in the past nine years as a result of mobile technology and the generalization of handheld devices. The difference to the data collected in 2005 is that today all the technology-focused activities listed could be operated with a single device: a smartphone, and the access and consumption of information through technology is now available more easily than in 2005.

Moreover, the digital natives are considered to have obtained a new way of learning as well, which can be seen as the on-going discussion about traditional teaching and learning methods versus the rising role of ICT in education and the nature of learning with the digital natives (see more moody and Bobic 2011, Barnes, Maratoe and Ferris 2007). The digital natives have obtained a so-called wireless worldview where nothing is out of reach and information can be accessed instantly. Teachers and instructors no longer have the option of looking something up for the next time, for example an answer to an issue which the teacher does not know the answer right away, but can surf the WWW and find the answer. On the other hand, this way teachers have the opportunity to admit their lack of knowledge but similarly to react in the situation right away by looking for the acquired information immediately online. Nonetheless, as the pupils and older learners' own devices are becoming more common, the learners have the possibility of searching for the information themselves as well, but still according to the school and teacher's rules of using the pupils' own devices in the classroom.

Wireless networks are hand-in-hand with the modern learning environment and the new generation is used to it: they rely on mobility and unrestricted learning. One can look up the homework from the teacher's web page and practice for an upcoming test with online exercises anywhere with any device. Palfrey and Gasser (2013) point out that schools'

major issue is to not to know when to use technology but knowing when it should not be used. Everything need not to be computerized even if possible and ways of utilizing ICT in learning environments must be explored and only the good ones preserved. Nonetheless, for instance, one cannot deny that the library has been replaced by Google search and printed material can be found mostly online as well so the need to stay connected in understandable (Palfrey and Gasser 2013).

Also, the ways of communication have changed: the net generation is used to a variety of instant messaging services and applications instead of picking up the phone and calling. Before seeing one another they discuss it, *meet* online, and everything can be instantly shared in the blink of an eye with others, with pictures, video clips and other media formats (Palfrey and Gasser 2013). Hence, the overall attitude towards communication is different and previous generations have learned how to use devices as tools with which they can communicate, whereas to netizens these devices are communication (Tapscott 1988, as quoted in Moody and Bobic 2011). This is the approach modern ICT-supported teaching pedagogy should possess as well. Palfrey and Gasser (2013) also discuss that the way people process information has changed but correspondingly remind that even though the process has changed, it does not mean that the modern learners would not be learning. This would be good for educators to process: even if older practises are being replaced it can reflect the fact that they are no-longer current and something new needs to be tried, and not see a new way of doing things as a complete risk and a failure in advance (Dede 2007). For example, reading news online can provide more information than reading about the same issues on a newspaper: online one can find relating articles through hyperlinks and, all in all, the information is sorted well and the access to different sources is quick and wide (Palfrey and Gasser 2013). However, because of the endless resources available online, pupils must receive education *about* ICT as well as *with* it. Palfrey and Gasser's views on the modern nature of learning support the present study’s findings as the data gathered for the present study show that the new generation does have a different, more technology-based ways of functioning and learning.

All in all, the digital natives multitask and are used to it (Barnes, Maratoe and Ferris 2007). An American study, conducted in 2010, for instance reports that children aged between 8 and 18 use multiple media at the same time: surfing the Internet, working on the computer and listening to music or using a mobile phone (Kaiser Family Foundation 2005). Carlson (2005) argues that the environment of a traditional classroom can bore the new generation because of a possible shorter attention span they have formed by the significant amount

of time they have spent with the media. Nonetheless, emotions and previous experiences cannot be left out of this equation, as every pupil is an individual with their own ideas and visions. Every pupil is not a born geek, with an iPad attached to their palm or even with the interest or like towards technology; someone can still prefer textbooks after using an iPad. Thus, one cannot generalize the nature of the net generation but one can neither dismiss the changing nature of the new generations. Also, the definition and existence of the digital natives is arguable and some scholars argue them to exist merely in the United States and others again reckon the whole concept being too generalized and over-used (Moody and Bobic 2011). Omitting the generation-classification, Carr (2007) discusses the already existing gap between pupils' cultural background, and therefore the use of technology can create a new division between pupils: the ones who are comfortable using ICT and the ones who are not ready-made digital natives. Furthermore, Sipilä's findings (2013) imply that students who are not successful or have otherwise problems in school, or are not motivated in learning can similarly have difficulties in motivating themselves using ICT as well. Hence, Sipilä (2013) argues that ICT is not a ready solution for already existing learning difficulties and activates all learners similarly to learning, but implies that ICT integration is an issue that must be endeavoured to succeed in.

Despite the attitude and skills of a pupil, mobile technology is the latest form of ubiquitous technology and utilized in educational surroundings as well, and the following section will enlighten why it is used and should be encouraged to be used. The section approaches the topic from the angle of opportunities and challenges of ICT utilization.

## *2.7 Possibilities, benefits and risks of using technology in a classroom*

> Asking whether technology can improve education is like asking whether experiments can improve science education. Everything depends on what kind of technology is introduced, how it is used, its design and how teachers are supported to use it. R. Noss, Director of Technology Enhanced Learning Research Programme (in "UK Science & Technology", issue 3). (UNESCO IITE 2012: 36)

Today teachers and learners are faced with all this history of IT and generations behind them to aid in facing new challenges brought by ICT. At least as many changes in theories and methods have been experienced also simultaneously in the field of language learning and teaching as well. A lot of the existent theories and methods support teachers' actions but today the educational methodology is in the need of an update because the tools in education have updated as well (Dede 2007). Furthermore, finding the ways to involve mobile devices in teaching has revealed to be a challenge. It has been studied what can be done with this new equipment and what does it enable compared to the *good old days.*

Key elements that lay here as well have been mentioned earlier also: sharing, wireless connectivity, mobility and versatility. However, the challenges faced with the use of ICT in teaching and learning could be a sole topic of a complete thesis because it includes multiple relative perspectives. Therefore, to cover it thoroughly in the present study is impractical and the angle of the learners and educators' difficulties is merely briefly discussed in this section, in addition to the advantages of using ICT in learning situations.

Developments in technological issues have always changed the ways of communication and today communicational aspects are an important part of any technical device's development: "students today must acquire a battery of skills that will enable them to take advantage of the diverse modes of communication made possible by new technologies and to participate in global learning communities" (Kasper 2000). The use of pupils' own devices in school has been an issue ever since mobile phones began to become common among young learners as well. Every school makes their own guidelines regarding the matter but the mainstream of Finnish schools, especially elementary schools, forbid the use of mobile phones when in school. However, with secondary school students, there are similarly views that the students' own devices could be integrated into lessons and therefore, in that way utilize the technology available. Yet, particularly with younger learners, a teacher cannot assume everyone to have a mobile phone, or nowadays a smartphone, and therefore utilizing them cannot place anyone in an unequal position. The pupils could be given the choice to use their own device if possible or then use a school-provided device in a lesson. Nevertheless, one cannot deny their existence in a pupil or student's life either, as if owning device of some sort all communication activities, as in calling, text-messaging, instant-messaging, checking e-mail and browsing, can be done with the same, portable device.

Moreover, issues that could be listed as beneficial factors of a successful integration of ICT into classroom are the possibility for resource modifications; involvement of different learning styles in teaching, applying the new generation's characteristics into learning and teaching; new, efficient ways of working; and new possibilities of activities in terms of technology. A teacher can learn to utilize technology efficiently in teaching but there is a big threshold before one starts to study and attempt to use any new equipment and go through the difficulties and frustrations when trying out new ways of teaching. Sipilä (2013) argues that Finnish teachers still use ICT too much in way that it is supporting traditional teaching methods instead of rising to the level of creating new more ICT-related pedagogy in teaching. Sipilä mentions that the overall level of technical

development is not equal between the device purchases of schools and the proficiency level of teachers in using the devices, and an important issue would be to settle this gap. However, a teacher, who has applied oneself to that road of integrating ICT into his/her teaching and has learned to have ICT present diversely in the classroom, can arguably find ways to ease one's everyday-school life practice with it as well.

Firstly, the resource modifications imply that resources can be divided differently, for instance time resources with saving time from some time-consuming issue: the utilization of a document camera and beforehand-written notes instead of using the whiteboard and writing notes during the lesson. However, in some cases the act of writing has a pedagogic value and therefore, using the document camera and ready notes would not serve the same, purposed aim. Another real-life example is that *PowerPoint*-presentations (Microsoft Office 2014) or any kind of digital slide-shows, which are used more than frequently in education today, have replaced the overhead projector with their effectiveness (D'Angelo and Woosley 2007). Also, ICT brings variety into teaching and learning and can present as a new medium for the learners to express themselves with (Couse and Chen 2010). It can create authentic learning situations with real-time connections and communication internationally, for instance taking cultural online-tours to museums, or making video calls to another group in another country, through wireless connections.

Secondly, different learning styles can be addressed simultaneously perhaps easier than before as in for example with the use of an IWB one can display different elements of a matter at the same time: listening to a textbook chapter means that there is the audio track playing, an image of the chapter projected onto the screen and also a line that moves in the screen underlining the sentence of the dialogue what is being heard at the same time. Additionally, with an IWB one can emphasize, for instance, the kinaesthetic side of learning easily when needed by utilizing the touchable surface: the tasks can motivate pupils as they can *manipulate* the content in them (Redington Bennett 2011: 23).

Thirdly, when endeavouring to reach the same presumable, higher skill level the net generation is in using different equipment, a teacher might understand the learning process better. The teacher might comprehend how they learn and what kind instructions are useful: for example the use of the iPad can come naturally from a netizen but using a certain educational application might be the attention of the instructions instead of the device-use. Also, the motivation to learn can be higher as the equipment utilized are ones the pupil can be naturally interested in. Furthermore, some activities are possible that have

not been before: having a group of pupils playing Pairs on an IWB by touching the screen to turn the cards and hearing the words on the cards while only a picture of the issue is displayed, or having students read out loud a chapter's vocabulary on an iPad while receiving instant feedback in writing whether their pronunciation was correct or incorrect. The latter example will be examined more in detail in the chapter 6 as a similar activity was a part of a lesson when data was collected for the present study.

However, applying technology can have disadvantages in learning situations as well. The process of integrating or applying technology in teaching and learning can be a challenge for both the learners and the educator in multiple ways: for instance, as in learning in general, the level of technical pragmatics of learners and educators can vary, or the reason and aim of utilizing the technology is not clear either to the educator or the learners. The educator usually encounters challenges with the instructions of ICT tasks or activities and the overall maintenance of the devices, in addition to the continuous search of material and effort in finding fluent methods of teaching with and about ICT. Also, as the integration of technology in general and specifically mobile technology is still a recent phenomenon and under development in different levels: municipal, institutional and individual teacher's levels, it is understandable why teachers can see technology more as a threat than a possibility. The teachers might lack or feel they lack the pedagogical insight of implementing ICT in the classroom. (STEPS: Executive Summary 2007: 5) The *STEPS* – project also presents data that there is a conflict between teachers' overall use of technology; scarcity of inside-use as in within teaching but plenty of outside-use as in lesson planning and organizational issues (STEPS 2007). Hence, the teachers are utilizing technology in their work, expect not in pupil-focused methods. In order to gain successes in ICT harnessing, the teacher should expand the use of ICT in schooling.

Then again, the problems of leaners are reasonable as well as every learner and learning style possess both difficulties and strengths, and for instance practising to use a mobile device or to operate an application can create specific learning problems with each individual. Thus, the learner's struggles might be about difficulties in operating a device. Also, even if the focus of previous research has not been on the learner, yet, the results often imply also aspects concerning learners. For instance, number of the studies discuss the thoughts of teachers about the learning situations or outcomes of ICT-supported lessons, and hence also learners. Henderson and Yeow (2012) argue that distraction of the devices used can be an issue in lessons, both in ways that the device attracts too much attention and the learner does not pay attention to the instructions, or if only some of the

learners in the same space are using a device, it might be difficult for the others, who are not operating a device, to concentrate to other activities. Additionally, a study conducted about the use of tablet computers with fourth graders report that technical difficulties can likewise occur: the touchscreen of an iPad was so sensitive to touch that pupils accidentally opened applications or engaged unintentional functions, and all in all the implementation of the touchscreen gestures was challenging (Hutchinson, Beschorner and Schmidt-Crawford 2013). Moreover, the *STEPS*- project consists of over 60 research studies about the use of ICT in primary education and they also discuss barriers relating to educational ICT use (see more STEPS: Case Studies Report 2007).

Nevertheless, a survey conducted in 2011, which is based on the answers from 2493 teachers from all over Finland, shows that the majority (69%) of teachers had noticed some sort of change in their use of ICT during the past few years and felt like it had brought new pedagogical value to teaching situations (Mikkonen et al. 2012a). Although, when introducing a new device, for example the iPad, to young learners, the process of learning to use device can also work as a learning aim and therefore, the pedagogical insight behind harnessing a new device can sometimes be simply to present a new medium for the child (Couse and Chen 2010: 77). The study by Mikkonen et al. (2012a) provides some relevant insights of the practical ICT use of teachers but then again, lacks the presentation of the thoughts of the learners: a good indicator that a study as the present one is needed.

However, successful integration of ICT can, for example enable conducting different kinds of projects that unite the group. The projects do not need to be school- or nation-bound anymore but pupils can participate for example a twin school's lessons all over the world and discuss in real-time with video- and audio-connection. Teaching materials if wished, can be authentic, with less effort than before, by ordering them online from target countries or by utilizing material provided for educational purposes already online. Moreover, authentic material can increase pupils' motivation in learning. Additionally, learning can happen through educational videos or through distance learning, both of which the main idea lies on interaction and real-time connection (Henderson and Yeow 2012). Through effective connectivity technology enables all class productions to be shared, either to publically online or to specific target groups through cloud servers, in the form of a homepage, a blog, or an e-mail. In this way the productions have concrete value.

Moreover, the vast research conducted within the *STEPS*-project about the national ICT strategies in European primary schools shows that ICT has positive effects on learners in learning situations and also beneficial effects on wider educational goals as well, for example: attendance, motivation, attitude and behaviour:

> "Motivational factors for using ICT in schools include: greater diversity of tasks, open-ended tasks, discovery and inquiry-based tasks offering opportunities to investigate and produce with the help of ICT rather than highly structured exercises. These factors motivate students and support the learning process." (STEPS: Synthesis report 2007: 22)

The study was commissioned by the European Commission in 2010 and covered 30 countries (27 in the E.U.) and 209 000 primary schools and 18 000 primary school teachers. However, as vast as this study is, it covers the view of the educators and again, the pupils' own ideas and conceptions are not the focus. (STEPS: Synthesis report 2007) Thus, there is a need for studies examining the topic from the pupil's point of view, which is the angle in the present study. Nevertheless, the next chapter will discuss the second theoretical section of the present study: the official status of ICT in education in Finland.

# 3 OFFICIAL OBJECTIVES OF ICT IN FINNISH EDUCATION

IT is not a separate subject listed in the Finnish National Core Curriculum (NCC) for any level in education and at the moment there are merely guidelines to schools and teachers on how, why and when to use ICT in educational purposes (Perusopetuksen opetussuunnitelman perusteet 2004). This chapter reviews how the role of ICT in schooling is covered officially, in a national and an institutional level. The role of ICT in the official publications can be best seen moreover by the lack of the mentions. IT is not yet to be taught as a separate subject in elementary education in Finland, even if, at a higher level in education, the matriculation examinations are planned to be computerized completely in 2019 (Digabi - ylioppilastutkinnon sähköistämisprojekti 2014). However, an updated core curriculum is underway and will be implemented in two years, in 2016. Some of the possible framework has been published and ICT is one of the issues on the update-list and both the current and the new NCC will be discussed in this section.

Moreover, the NCCs in general guide schools in a national level and in a municipal level, then again, the school's individual core curriculums offer the guidelines. The National Board of Education, which is also behind the NCC for basic education (POPS 2004), has created several schemes, reports and other documents dealing with the issue of ICT in schools and made these available for the schools to use. In a national level the *National Plan for Educational Use of Information and Communications Technology* (2010) by the

Finnish government guides the development of the current education in the information society. Furthermore, municipals and institutions have also became active during the last decade or so and created their own ICT strategies. The variety of these documents and guidebooks will be discussed in the following sections: The NCC for basic education (POPS 2004) first and then other Finnish publications.

## *3.1 The NCC and ICT*

A method used in journalism, police investigations and research called *5W1H*, is also used in this part of the present study. The method is mostly used nowadays in journalism but widely in educational field as well, for example in project planning in IT (University of Nebraska-Lincoln 2012).Similar logic in problem solving has been used for centuries, already in ancient Greek, but it was Rudyard Kipling who made the method known by implementing it to a poem in a story *The Elephant's Child* in 1902 (Kipling 1902). Hence, the method is likewise known as Kipling method, in which the main idea is to reach a conclusion in a matter by asking six particular types of questions – the five Ws: *what, why, when, where and who,* and one H: *how.* The NCC for basic education (POPS 2004) and various other official publications were examined for the study by using this method and the findings are presented in this chapter following the 5W1H- methods guidelines. The aspects of the five Ws are covered first, following the angle of the H. The chapter is concluded with discussing other additionally relevant official documents in general.

## *3.2 What and Why: General references to ICT in official publications*

In 1994 the Finnish NCC for basic education (Peruskoulun opetussuunnitelman perusteet 1996) mentions the use of computers as an aim the pupils must acquire during the elementary and secondary schools. However, methods or activities about how it should or could be done is not listed. In 2004 the updated NCC’s situation is that ICT is mentioned more often in the curriculum but still the how and why - sections are a miss. Hence, not a lot has happened during 10 years. Although, the role of ICT has only begun to increase at the end of first decade of the new millennium and for example, with the revolution of mobile technology and devices since 2010 it has undergone several stages. Therefore, the new curriculum underway and published in 2016 ought to take a bigger step regarding the role of ICT than the last curricula update did. It is probable that ICT will be in a greater role when the new NCC (Luonnos perusopetuksen opetussuunnitelman perusteiksi 2014 2012) will be issued, along with a lot of changes one can now merely speculate. An outline of the new curriculum was published in 2012

and ICT in schooling is one of the issues which are more emphasized than before. Phrases attached to sections discussing ICT in the plan are, to mention a few: *technological developments, the effect of ICT on one's own safety and communication between people, the possibilities of ICT in education, a globalizing media world that different ICTs, web services and games modify,* and *diverse utilization* (Luonnos perusopetuksen opetussuunnitelman perusteiksi 2014 2012).

The role and mentions of IT in the NCC do not increase until the secondary and upper school levels. However, the increasing role of the ICT in education in any level can still be seen in the rising number of official documents concerning the issue, for example a variety of guides, documents of guidelines and ICT strategies formed in a municipal or institutional level. Every school forms their own guidelines and decisions about the principles on how to make ICT a part of the school and pupils' everyday life. As every school makes their individual choices, so does every teacher. Nowadays, as the role of ICT in education is such a vague idea, the way, amount and quality of integration varies between teachers case-by-case. However, as aforementioned, some additional documents have been formed by this day and their only focus is on ICT and these are published aiming to aid educators in their work as well as provide general information on the issue.

Kotilainen (2001) discusses in her paper the subject of media education and what forms of it are in practical use in schools. Kotilainen conducted a survey in 1998, which was answered by 587 Finnish teachers, and the results show that all of the teachers had media education as a part of their teaching. The teachers were, for example addressing different themes of ICT in elective courses or in their own subject. Also, the school can be involved as well as an individual teacher: a school can additionally have a guideline in their core curriculum of emphasis on communications and media education. Kotilainen refers to media education as being an issue that originates from individual schools and has not been regulated in any way by laws or regulations and therefore, it is not a subject and no-one alone is responsible for it (Kotilainen 2001: 42). The survey is relatively outdated considering the topic and approach of the present study and the situation of media schooling today. However, in 1998 media education was a new topic in teaching and even if today the equipment have developed greatly compared to the technical infrastructure of a 1990’s classroom, the same principles exist. Kotilainen’s survey offers valid aspects of to the origins of media education, even if the extent of it today arguably is vaster and more diverse. Despite the issues arising when determining the nature of what is ICT in schooling, the next section, then again, clarifies where in schools ICT is present.

## *3.3 Where and When: Learning environments*

**A learning environment** is a concept closely linked to the topic of the present study as when discussing integration of something into a classroom, one must define classroom as well as the matter of integration. The technical infrastructure of a classroom relates closely to the subject of learning environments and if observing the issue closely enough, one might lose the border between the infrastructure and learning environment. These concepts were examined earlier in chapter 2 and discussed that today the learning environment extends beyond the walls of a classroom. Yet, the learning spaces or environments inside the school must be counted as well. In the plan for the new NCC (Luonnos perusopetuksen opetussuunnitelman perusteiksi 2014 2012) ICT is also integrated into the sections discussing learning environments and is recognised as an issue to be taken into account. ICT is planned to integrate into every-day teaching and ICT-aided learning to be utilized in different learning environments, which are, in addition to schools' inside and outside spaces, the nature and other surroundings of the school. How ICT is relevant here is that with modern mobile technology learning can take place anywhere, outside the school building as well (Nummenmaa 2012: 22-23). However, a lot of issues are reviewed in a theoretical level in the plan and these above mentioned are the few matters discussed in a more practical level.

Another article collection, by the Finnish National Board of Education deals with the topics of learning environments and ICT from various angles with the common aim to locate flaws in the educational system and come up with improvement suggestions and procedures (Kankaanranta, Mikkonen and Vähähyyppä 2012). Mikkonen, Vähähyyppä and Kankaanranta (2012b) introduce the concept of a learning environment in general and update the concept by connecting it to contemporary issues: the 21st century skills. Mikkonen et al. (2012b) emphasize that a learning environment covers nowadays more than the traditional classroom and a term **learning space** has become a used synonym in the field of learning environment research - a learning space can be physical, social, virtual or personal (Mikkonen et al. 2012b: 5). Also, they discuss the 21st century skills, which are critical thinking, problem solving, collaboration and information reading skills, in more detail and emphasise the importance of utilizing ICT to practice these skills in multiple learning spaces.

The physical, separate space of an IT classroom in a school is not as granted nowadays as it used to be. It is discussed whether a space like that is needed in schools anymore,

and with many new schools the decision is not build one, or they plan it to the building blueprint but leave it in the drawn level. In an interview, which was conducted in autumn 2012, with the principal of the same school where the data for the present study was collected, the principal suspected that with the next equipment update, the role of the school's IT-class would also be re-evaluated. Especially the role of the tablet computer iPads would be more established and encouraged. I enquired the current status of the iPads in the school when conducting the research in the autumn 2013, a year after the interview, and the number of the tablets have increased from the original 50 device to over 250 iPads. The principal's vision is that IT should be brought to the pupils, instead of taking the pupils to IT, which is seen in practice as the iPads are stored in portable trolleys and the devices used in rotation between all the school’s groups.

Nonetheless, with the withdrawal of IT classrooms, the learner/device ratio has become more of a discussion topic and in school comparison it is an affecting factor: how many learners exist per device. A report on ICT's status in educational use in Finland in 2011 states that the approximate ratio is 5.5 learners per a computer in schools in Finland. However, additional comments are that 18% of schools have the ratio of 10-19 students per device and that 60% of the computers used in schools are over three years old (Tieto- ja viestintätekniikka opetuskäytössä - välineet, vaikuttavuus ja hyödyt 2011). Therefore, the statistics no longer correlate with the situation today but offer an insight of the level the modern development has begun from. Also, even if the survey is relatively recent, it indicates well the uneven status between schools in their technical equipment. Moreover, the necessity of an upgrade in the equipment standards in schools happened relatively quickly and therefore the field is still need for more research from various perspectives to achieve those standards. Hence, the state of the updates in the schools are not equal and the schools with old, out-dated equipment are still very common in Finland.

However, the technical infrastructure of schools has been under construction just these past few years, during which the equipment levels could have also so been updated. The popularity of mobile devices and their purchase to educational purposes has become more common, with which a complete new set of devices could have become part of the technical infrastructures. The next section discusses the role of the decision makers, who influence these purchases, and other people in the matter in more detail.

## *3.4 Who: The diversity of people involved*

As ICT is not a separate subject, correspondingly there is no need to have a separate teacher in schools for it either. Nowadays a teacher can be named with a title of *an administrator* or an *IT support person* in schools but this does not obligate any special IT education responsibility. Nonetheless, one can study to become an IT teacher but the degree practically does not matter, as every teacher is qualified of teaching IT after completing the pedagogical studies for teachers in Finland. In addition, there are no guidelines about teaching it. The role of ICT in a single school depends on the stance of the school and its teachers. Attitude is a major factor when considering the possible disadvantages of ICT in schooling. A fearful or anyway distressing attitude of a teacher can lead to performance anxiety, which cannot exist without it harming the learning situations, or it can lead to bad or inadequate instructions, which can then also create insecurity in pupils and this way harm the learning process.

Depending on the teacher, the use of IT can therefore be daily, weekly or needs-based use, as in projects at the end of every semester. The teacher's personal interest affects the way and amount of how IT is integrated. Usually schools do offer courses for teachers to educate themselves and there is usually a pioneer of some sort in the community, who instructs and inspires others to the matter as well. Also, the schools can involve themselves in different projects or schemes where IT is the focus, for example a research where the use of new equipment is tested and examined. Similarly, the compulsory education days held to teachers can be themed by IT related issues. Nonetheless, an IT-oriented and motivated teacher will arguably involve IT more and in various ways to teaching and learning than a teacher with a negative position to ICT. The attitude of the teacher has been studied to have a positive effect on learning as well (STEPS 2007). All in all, a teacher who is the most interested in educating oneself or in ICT in general can work as an educator for other teachers and have a position as an administrator of some sort in the school. The collaboration of teachers and staff should be in a big role and schools ought to encourage teachers to work together, in order to unload the burden of individual teachers (Kotilainen 2001: 42).

The budget available for schools to use usually depends on the status of the municipal’s financial situation, and therefore there are great variances between similar schools in different areas of Finland. The school’s board, who for example decide how the budget is divided and used, are also a part of the process of deciding how ICT is experienced and

seen in the schools. Hence, the differences of schools' possibilities and capacities to use ICT create inequality between schools. The institutions make their own decisions similarly in device purchases and can rule how their budget will be used to upgrade or update the ICT level in the school. Thus, the equipment level and structure in schools also varies according to the general policy of the school about ICT: for example if the school follows an aim that ICT is present in learning situations and the school personnel are active about the issue, the decision would be different than in a school with decision makers and staff without any interest in harnessing ICT into school life. Moreover, the following section examines the nature of the realisation of ICT integration processes into learning environments and situations in schools.

## *3.5 How: Teaching and learning methods of ICT*

Due to the solitary, the officially undocumented status of IT in primary education, neither are the teaching or learning methods listed anywhere. Furthermore, none kind of assessment or grading guidelines exist either. Teachers can hold separate IT lessons and every time focus on a distinct skill (typewriting, recording) or an issue (media education, information security) and assess it but it is, at the moment, entirely up to the teacher to decide how and when IT is used.

The role of ICT, however, can increase despite the teacher's actions, with for example, equipment purchases made to the school. Today's trend, which is discussed in the first part of the present study's theoretical background, are tablet computers, which create interest by their mobility. Nevertheless, the bare existence of the devices is not enough but the use and utilization is still up to the teacher. Teaching, or integrating IT into teaching, can be difficult as no ready models or materials exist, but every teacher has to find their own natural way of utilizing ICT in teaching. Mikkonen et al. (2012a) enlightened the situation in Finnish schools in 2012 by conducting a questionnaire survey about learning spaces, which was answered by 2493 teachers all around Finland. The results include mainly positive attitudes from the teachers towards ICT but the pedagogical background and the amount of use varies significantly between individuals.

The survey shows that there are still all kinds of teachers - those who use ICT in their teaching constantly and those who still do not use it at all (Mikkonen et al. 2012a). The answers include also answers from teachers who were using mobile devices in their teaching already in 2011. An interesting result reported in the study is that teachers answered being comfortable and fairly good at assessing ICT learning results. The study

still does not show how this was done. It is speculated that the assessment grading is about detached activities or perhaps the skills are valuated during a learning process that utilizes different ICT skills. Anyhow, the scholars of the study conclude that different methods for following and assessing different elements of ICT in learning should be established and implemented. All in all, the study implies that ICT is used differently by every teacher but mostly in 2012 teachers valued their technical skills to be better than their pedagogical skills when it comes to ICT use. (Mikkonen et al. 2012a)

In one individual Finnish elementary school's strategy there is a list of learning aims for the pupils in primary education to be achieved at the end of the sixth grade (age 11-12). An aim on the list is that the pupil should be fluent in typewriting with both hands. At this stage the reality and the envisioned aims of the strategy collide, as this kind of learning achievements could only be listed if the subject would be taught as a separate subject in school, if even then. Nevertheless, this proves that schools have taken action themselves by creating their own ICT strategies, which shows initiative because schools are not obligated to form one. Also, as mentioned earlier, the Finnish National Board of Education is active on the matter of ICT in education as well and are publishing separate publications on the issue to an open use and these publication include guidelines to schools on how to approach the matter of educational ICT (Edu.fi).

Overall, as a general notion it can be concluded that the role of ICT in schools is moderate in Finnish primary education. It might be increasing at the moment but because it is not officially listed as a separate subject there are no official requirements in implementing it to education. Integration processes vary a great deal, depending on the participants' interest in it, beginning from the municipal level: from individual teachers to decision makers at the schools and municipal boards. Key factors in the issue of pupil's learning of ICT skills, are the personal relationship of individual teacher and ICT, the interest of the teacher to utilize it and the attitude of the rest of the school staff to IT. Hence, it can be argued that a top-notch equipment level at a school does not alone guarantee the pupils' learning of ICT skills but the integration into different subjects must be similarly successful. The importance of ICT in education is still acknowledged in some level in the society as individual schools are creating and already have a lot of their own material dealing with the role of ICT. A great challenge in the future is how the different written aims and methods can be brought to realizations in classrooms and executed in practice.

## *3.6 Other official ICT-related publications about Finnish education*

In a national level in addition to the NCC, other guidelines about the role of ICT in education are for example publications issued by the Finnish National Board of Education and Ministry of Education and Culture. The Finnish government and schools have multiple ongoing projects relating to the use of ICT in schools and education. Most of the studies deal with the challenges brought by ICT: the new technology, new devices and the changes in the technical infrastructure, and most of them have a certain (futuristic) vision as an angle. As mentioned above, a current challenge is to move these ideas and visions from paper into reality; these schemes attempt to ensure it by writing suggestions aligning their vision, on paper. However, is that a solution either? This section discusses few recent Finnish publications about the role of ICT in elementary schools.

A comprehensive research was conducted by a work group issued by the Ministry Education and Culture and they published a report in 2010 dealing with the future prospects of education in the modern Finnish information society (Koulutuksen tietoyhteiskuntakehittäminen 2020 2010*).* The reports begins with a statement that Finnish education is top quality but when it comes to binding ICT into it, the case stand changes. The new pedagogical aspects the latest technology enables are not utilized in schooling as efficiently as it could be in Finland. As the new generation learns differently and many traditional teaching and learning methods are not suitable anymore, schools should collaborate together and establish new methods (Moody and Bobic 2011). However, as discussed in the previous section, every school stands on their own with their decision and guidelines. The schools ought to open their doors and show their operational and even experimental practises to others as well in order to establish common, functional practises (Koulutuksen tietoyhteiskuntakehittäminen 2020 2010: 9). The vision described in the report emphasizes, to mention a few, the need for variety in using ICT in different learning environments, qualitative e-materials and the importance of media education. All in all, the report is a review of a wide range of issues relating to ICT's educational purposes and offers a vision of its presumable status in the future. However, it is mentioned that the pace of technology's development today is fast and the research work and effort done at any point today is almost immediately outdated and acts then merely as a base for future studies (Koulutuksen tietoyhteiskuntakehittäminen 2020 2010: 10).

Additionally, the ministries of Education and Culture, and Transport and Communication have also published papers about ICT in education related topics. The Finnish Ministry

of Transport and Communications have published a document, a plan for educational purpose of ICT, which also provides tools for implementation of innovations offered (see more National Plan for Educational Use of Information and Communications Technology 2010). Main occurring themes in all of the schemes are, as listed as topics in *The National Plan for Educational Use of Information and Communications Technology* (2010): national objectives, learner's future skills, pedagogical models and practices, e-learning materials, school infrastructure, teacher identity, teacher training, operational culture and leadership at school, and business and network co-operation. Other studies or reports completed on the subject have not included much practical guidelines in their content and these include for example the *Tieto-ja viestintätekniikka koulun arjessa* - project in 2010, and the *Tieto-ja viestintätekniikka opetuskäytössä* - report in 2011, all issued by the National Board of Education (see more Tieto- ja viestintätekniikka opetuskäytössä - välineet, vaikuttavuus ja hyödyt 2011).

To conclude, the role of ICT in Finnish education system in elementary level differs drastically between municipals and individual schools and teachers. In some schools the situation is better than the officially documented status but there are also schools which equipment standards do not reach to the basic needs of the pupils or the teachers. Nevertheless, the role of ICT is hopefully under radar and in the new NCC it will be considered more than in the last two versions of the NCC. Moreover, there are projects conducted on both national level and institutional level and different facets are working for the issue to be acknowledged and acted on more. This chapter concluded the general theoretical background for the present study and the next chapter 4 focuses on the more identifying angles of the study: mobile technology, iPads and English language learning.

# 4 THE ROLE OF MOBILE TECHNOLOGY IN PRIMARY EDUCATION

Finally, the theoretical framework for the present study is summed up in this fourth chapter which discusses the two main themes as close as possible to the present study's main aim: what is the role of ICT, iPads in specific, in an elementary school English classroom? The chapter examines more closely the already presented issues, as in the role of ICT in a classroom, oral communication as an English language skill and the iPad as a mobile device. Previous research on the matter is reviewed at the end of the chapter.

## *4.1 English oral communication in elementary school*

This section briefly discusses the role of oral communication in English language learning and more precisely with beginner-level learners. Learning and teaching oral communication have become emphasized relatively recently as the focus of foreign language learning (FLL) has been on other language skills so far. Learning English as a foreign language (EFL) has gone through multiple phases: from grammar-translation method, in other words grammar-focused teaching, to more communication-focused learning and teaching. The formerly listed focuses on grammar rules which frame the language to be learned and learning happens through memorization, and the focus being on reading and writing skills instead of spoken language (Yule 2006). After grammar-translation method, EFL moved towards emphasizing the spoken language and the audio-lingual method was introduced. The audio-lingual method stresses to importance of drilling and language was learned through repetition of oral exercises. The recent methods, on the contrary, have begun to emphasize the importance of communication in language learning, and to value spoken language as well as comprehending language. These revisions are called communicative approaches and their guideline is to highlight the function of the language instead of the correct form of the language. (Yule 2006)

In any case, despite the method being used to learn and teach English, language learning circles around four language skills: reading, listening, writing and speaking. Another division is between the nature of the skills: receptive skills (reading and listening) and productive skills (writing and speaking) (Widdowson 1987). Nonetheless, language should be examined and learned as a unite concept but even more nowadays the teaching and learning (tasks, lessons, courses) are divided between different language skills. However, all of these skills ought to be taken into account and practiced equally in order to become a fluent (and accurate) language user. In the NCC (POPS 2004) the objectives in teaching and learning are also set by the four distinct skills and aims relating to the skills are presented with an official chart of language skills competence: The Finnish CEFR (CEFR 2003). The NCC and the CEFR emphasize communicative competence as well and therefore, teaching focuses today also on the development of learners' communicative competence. Still, studies with an oral communication approach are rare in relation to studies about other language skills.

Thus, the focus of oral communication in teaching and learning has varied and therefore, also the focus of its assessment. The evaluation and assessment of oral communication

could be its own thesis' topic and therefore, not discussed further in the present study. Even so, the main elements of oral communication have to be mentioned and clarified as the aspect of oral communication will be revised in the data analysis section. The ways to practice oral communication in elementary school are vast and nowadays more possibilities are enabled by new technology. The basis of oral communication is to learn how to produce and say words correctly: to pronounce, and to pronounce the sounds that form the words, phonemes, correctly (Yule 2006). However, the elements of developing one's oral communication skills include much more than the skill of pronunciation, as in the rhythm of speech, assimilation and word stress. Also, in addition to phonology (the study of speech sounds in a language) in order to gain good communication skills on a general level, one must learn to become, for instance an effective listener and gain good presentation and conversational skills as well (Widdowson 1987).

Though, this all comes gradually when learning oral communication and in elementary school one begins with the basics: sounds. Learning oral communication in primary education means learning to produce different speech sounds and with combining these, to pronounce words. After learning to pronounce words, one can start forming sentences and gradually have conversations in English. The present study's data lessons' tasks were designed to practice oral communication on a general level: pronouncing words and utterances, do a conversational task in pairs, and to freely produce English without any instructions for a dialogue structure. These tasks and their analysis will be discussed in chapters 5 and 6.

As a final point, the reason for choosing oral communication for the present study's focus language skill was fairly clear after the topic for the study was settled. As the idea for the whole study arose from a personal interest, also the emphasis on oral communication was included as a result of my interest of the topic. First, oral communication is still the skill that needs to be emphasized in education in order to it be an equal part of teaching next to the rest of the skills. Today's communicative-focused language learning is still new compared to its predecessor of grammar-focused teaching, and therefore oral communication can easily be slightly omitted in teaching. Hence, the will to discuss oral communication was the strongest because the other three skills have been the centre of research the most of the history of language studies so far. Secondly, mobile devices are argued to be most useful when used in productive environments and the devices' advantages being for example immediate feedback, these issues, therefore, go more hand-in-hand with productive skills than receptive skills (Kurland 2012). Finally, choosing

speaking instead of writing was based on the methodology of data collection suitable for the present study: lessons with oral communication tasks would provide more data in a video recorded form than lessons focused on writing tasks. The whole framework for the present study's methodology will be presented in the next chapter 5. The next section of the present chapter, then again, introduces an approach closely related to the topic of ICT in education: MALL.

## *4.2 Mobile-Assisted Language Learning (MALL)*

Mobile technology has revolutionized the field of education, the processes of learning and teaching. As mentioned several times above, the phenomenon is new and its research still revolving. However, the use of mobile technology is still even more at its infancy and as Sheng, Siau and Nah (2010) discuss, more practical than theoretical research results are needed. Sheng et al. argue that managing information through IT such as mobile technology has changed the nature of learning. Using mobile technology makes learning completely context-free and therefore more advanced; classrooms are no longer a restriction of being the only possible learning environment, the duration of 45 minutes of a lesson is not the only time to communicate with the teacher or peers, and therefore, learning can be **on-demand** (Laouris and Eteokleous 2005). MALL emphasizes these features of mobility and versatility, which are brought by ICT to language learning, and introduces ways of applying the approach's visions in the learning spaces and situations.

As MALL is extended from CALL, the terms relating to these theories can be difficult to adopt. **E-learning** is concept which can be used when referring to all kind of technology-aided-learning: any kind of use of electronic media. E-learning does not refer directly to distance learning but cover the face-to-face learning situations as well. Variation of forms of e-learning also exist and all of these terms can be used to refer to e-learning as they are highly synonymous with each other: online education, computer-based instruction (CBI), web-based training (WBT), and m-learning. All of these present a particular side of e-learning. The most closely relating term to the present study is the concept of **m-learning**, which emphasizes the use of mobile technology in e-learning. Sharma and Kitchens (2004) have studied e-learning and m-learning's differences through dividing their features into four categories: device, connection, environment and nature. By describing the features of both concepts in the categories, the main idea of both of them is separated successfully. According to Sharma and Kitchens (2004), **e-learning** is based on the use of a computer and relies on a fixed network, is effective in distance learning, and interactivity and

plentiful use of media are in emphasis. **M-learning**, on the other hand, utilizes portable mobile devices as in smartphones or tablet computers, uses wireless connections as in GPRS and Bluetooth, is context sensitive (in other words has its basis on realistic situations) and embraces spontaneity. Hence, m-learning is taking place when iPads are utilized in a classroom and it is a direction today's classroom's technical infrastructure enables and is guiding the teaching towards.

Hence, MALL's difference to CALL are the aspects of mobility and connectivity in the environment. MALL offers the same possibilities for learners to practice independent learning and receive immediate corrective feedback than CALL (Lang, Sung and Chang 2007: 130). However, the strength of handhelds' lies in their mobility (Petrova and Li 2009). Therefore, the approach of MALL was introduced and its unique features became current: the learning environment is not tied to some specific location anymore and devices can be easily moved inside an institution, or even outside it. Also, other distinctive features of MALL, in addition to immediacy and individuality, are context sensitivity and social interactivity. New language learning methods have been explored in the recent years by reason of studying these features. (Lang et al. 2007) Lang et al. (2007: 130) also report that most of the studies MALL has been applied to discuss the use of mobile devices in relation to oral communication, vocabulary or grammar's point of view and less studies have been made linking MALL to reading skills. Also most of the studies I found were foreign. The present study can be partially counted as a new MALL study in Finnish education from the aspect of technology and English oral communication, as the study's data is analysed according to the features of MALL as well in chapter 6.6.

Moreover, Barnes et al. (2007) list the characteristics of the net generation and emphasize their interactive nature. As MALL's one main feature is interactivity and therefore, suitable for modern day learners. MALL's features have overall brought unique additions to EFL learning: a social aspect to interaction, connectivity to the learning environment, and individuality and context sensitivity to performing in a learning space (Lang et al. 2007: 2). The pupils can freely move around the learning environment *with* the mobile devices used and remain connected through Wi-Fi in order to share the content of the device, such as pictures and videos, with peers or the teacher. Also, individual learning is enabled as the pupil has his/her own device in use and learning can be experienced uniquely in any context. The context sensitivity is that the learning does not have to take place in an IT classroom, where pupils are seated in front of a stationed device the whole lesson anymore, but can be placed according to the learning and teaching aims.

All in all, most importantly, one should see that MALL is not a teaching method in itself but can support any given method (Conacher, Taalas and Vogel 2004). It can be said to appear as an independent and movable learning activity, in which the teacher has a pedagogical stand behind it and language learning is supported with appropriate mobile devices through which the features of MALL can be realized (Petrova and Li 2009: 768). Even though the concepts of MALL, CALL, e-learning and m-learning are suitable for the present study's topic, they are not emphasized in the data analysis but mentioned here as relative approaches and concepts in the matter. The purpose of the present study is to explore how mobile-devices (tablet computer iPads) are used and experienced in elementary school level. The next section introduces and describes the iPad in more detail and examines ways of using in educational surroundings.

## *4.3 Educational features of iPads*

The phenomenon of iPads in education is relatively new and thus, changing the standpoint towards practical one from a theoretical one has only begun, and teachers can feel overwhelmed with these devices. Still, the possible advantages of iPads has been studied already rather extensively from the teacher’s point of view and therefore, there is a base for the arguments to use these devices. Applications and features that make these devices unique and different compared to any other device preceding them, will be discussed in this section. Also, the standpoint is to shed light on the ways of using iPads in education, instead of questioning whether it should be used. The present section focuses on examining the ways of using the iPad in the classroom according to the strengths of mobile devices: mobility, diversity, immediate feedback and support for independent learning. Criticism about the use of mobile devices in education is likewise discussed shortly at the end of the section.

First, the description of the device itself. Tablet computers, as in iPads, have generalized in educational use in the current decade. The Apple's creation iPad was released in 2010, which is the year when all tablet computers became popular and new models started to increase in the market. The first model of the iPad is poorer in functions than the latest release and nowadays schools have the courage to purchase them as the problems or lacks in the first models have been fixed and improved. In other words, product development has reached a solid enough level. The iPad is one model of tablet computers suitable for educational purposes. Other possibilities are tablet computers running on different **operating systems** (Windows, Android). The iPad runs on its own, iOS operating system,

which is a closed system which means that any other operating system's programs cannot run on the device. The iOS is the opposite of other, **open** operating systems that are then again more accessible than the iOS, for example coding personal programs to run in the system is easier in open systems.

Common features which tablet computers share are, for instance, Bluetooth, 3G-network, Wi-Fi, a rotating single or multi touch-screen and GPS. The versions available of each brand may vary on the type of connection it uses, 3G, 4G or Wi-Fi. One major difference of the iPad to the others is the feature of Flash-support, which is not included in the iPad. This affects for example browsing webpages and due to the lack of Flash-support, the iPad cannot display pages designed on *Adobe Flash* (Adobe Creative Cloud 2014). However, for example *YouTube*- video service has made an application of the service which can run on an iPad. Also, even though Apple's devices and systems are perceived as these **closed** ones, Apple provides diverse and enough support in managing the devices and their operating systems. For example, a program *iTunes* makes it possible for the Apple device to be connected and controlled through another device with the same or different operating system. Apple has formed a coherent enterprise and has been able to create and maintain its status as one of the number one technological manufacturers in the world. Thus, the iPad is popular in educational use as well and possesses features which makes it suitable for educational use, and its management is supported well by the Apple's services.

The iPad was designed to be used as a personal device which can be modified according to the needs and purposes of use of every, individual user. However, an iPad can be modified to be used in education as well and it is one of the tablet computer models used in schools. Redington Bennett (2011: 1) describes a tablet computer in educational use as follows: "Start with the idea that iPads are like personal electronic whiteboards. They can deliver content in an interactive way, but on a one-to-one level". Originally the iPad was designed as a personal device but it has been explored to work similarly as a shared device in educational purposes, which enables it to be used in turns between groups. However, an iPad offers the best user-experience when used individually, as a pupil or teacher's personal device. (Kainulainen and Kilpiä 2012) iPad can be seen as a pioneer among tablet computers: it has a well-thought design, a big multi-touchscreen, a vast selection of available, active applications and lacks the need for several peripherals (Henderson and Yeow 2012: 1).

The iPad can be used within several educational frameworks, all being suitable for different learning aims and situations. First, the tool perspective: informative, situational, constructive or communicative tool, depending on the language learning goal of the lesson (Lim and Tay 2003). Emphasizing any of these tool-categories, an iPad is an easy tool to use as the pupils can independently navigate and use it (Hutchison et al. 2013). Also, suitable applications for children have been studied to be those with the possibility of choice-making. Moreover, the study by Hutchison et al. (2013) examines the ways of using the iPad as an instructional tool, a supportive tool for the teacher. However, the results discuss the viewpoint of the pupil as well and it is reported that the use of the iPad in lessons can become a social activity, a co-operative situation, and due to the mobility of the device, the socialization in the classroom is increased (Hutchison et al. 2013: 9). The increase in the level collaboration between pupils is an issue which was seen in the data collection lessons and will be discussed in chapter 6. All in all, the use of iPads can create co-operation between the teacher and the pupils as well as between the pupils themselves. The new generation learners, for instance might be able to show the teacher some features of the device as well, correspondingly to the ones the teachers demonstrates to the pupils.

Furthermore, features of the iPad can be utilized according to the language skill emphasized in the lesson: productive or receptive, and can be used individually, in pairs or in groups, depending on the nature of the learning situation. Kurland (2012) discusses in her article the versatility of iPads and the possibilities they enable in education. Kurland suggests iPads to be used in group activities, which would involve problem-solving skills, communication, working together as a group and critical thinking skills, as these are the skills learners should gain in the 21st century. Also, as a result of the ease of using these tablet computers the classroom pedagogy could shift towards more student-centred design, instead of teacher-focused one. (Kurland 2012) Immediate feedback can affect pupil's actions as he/she does not have to wait for everyone else to finish in order to get feedback but the feedback is provided in real-time and there is no time to get distracted (Hourcade et al. 2009, as quoted in Henderson and Yeow 2012). In addition, the classroom does not restrict the area the devices can be used, and thus, the learning environment can be moved to any site of the school, even outside. Moreover, all the productions and projects can be saved and shared - nothing is done in vain and lost thereafter (Kainulainen, Kilpiä and Purhonen 2013).

Also, tablet computers are studied to be a good tool for greater learning goals as well in education: preparing children to be technologically literate digital citizens (Couse and Chen 2010). "Thus, to be fully literate in the 21st century, children must be proficient in the new literacies of 21st century technologies" (IRA 2009, as quoted in Hutchison et al. 2013: 17). The current generation is more synched with technology than previous ones and therefore ICT can work as a tool and be advantageous when acquiring the 21st skills, which include for example ways of thinking, ways of working, and knowing the tools for working (UNESCO IITE 2012: 45). Through active use of iPads functional ways of applying the device will form, for instance, the aspect of independence can be gained by active use: as pupils become more familiar with the device, the need for instructions and assistance can lessen (Couse and Chen 2010: 93). Moreover, co-operative learning and task-performing is also possible as the newest releases of iPads support a multi-touch-screen technology (see more Buxton 2007), meaning that multiple pressure points at the same time are detected by the device. The surface is activated by the pressure of a stylus or a finger which are the most common stimuli, and with the finger-touch pupils can be motivated by the natural means of input: something happens in the course of their movements. The multi-touch technology can likewise lessen inequality among pupils when the iPads are in co-operative use, when there is possibility of simultaneous use by multiple users instead of one at a time. (Agostini 2010, as quoted in Henderson and Yeow 2012: 2)

The functions of an iPad in an organisational use are more advanced abroad (for example in the U.S.) than in Finland, at least for now, and therefore, from an administrator's perspective, the use of the devices could be better (Kainulainen, Kilpiä and Purhonen 2013: 11). Nevertheless, from the user's perception, which in this case is the primary school pupil, the use of an iPad can be productive and easy. The arguments for the use of iPads disclose the shape of an iPad, which has been considered to work as an aid for the device being suitable for school work: the measurements and shape of the device resembles closely the most popular size of children’s story books. The lightness of the device is an advantage when the users are young children, in addition to its size, lack of attachable devices or wires. It creates a device which is easy for the child to carry, hold and use anywhere. (Henderson and Yeow 2012: 3) Also, a device with a smaller screen would lack something essential in the learning process, and would not possibly create the same amount of involvement as can be created with these devices which provide a sizable screen, but still the mobility element (Henderson and Yeow 2012).

However, the possibility of the devices working as a distraction, drawing attention away from the actual lesson is a risk as well, when the tablet computers are, for example in the pupils hands for the whole lesson (Henderson and Yeow 2012). Though, this risk can be minimized by, for example handing out the devices not until necessary, or letting the pupils have a moment of free usage with the device. The most challenges are met usually in the context of long-term commitment to the devices, the process of deployment, for example: introducing the rules of using iPads to pupils and finding an efficient way of instructing, in order to make the presence and use of the device as a natural part of the lessons. Nonetheless, the nature of this risk and the one using the device for other things than educational ones, are more relevant if the device is personal for each pupil: in the case of devices rotating in school this problem cannot arise so strongly.

A good tip for educators was mentioned in Couse and Chen's (2010: 95) study, which deals with the tablet computer use in early-childhood education in the U.S. They discuss that helping pupils understand the device and not become frustrated, the educator can come up with language for the device's functions: *the computer is thinking* or *the computer didn't hear you, try again*, which can work when working with young learners. A good base for all of this still exists, as the motivation of pupils is guaranteed (Couse and Chen 2010).

Whether the iPads are an integral part of a classroom or a mobile-asset in the school, there is no point of laying considerable pressure for the use of the devices in lessons. Therefore, the solution for the educator is to find the courage to hand-out the devices and discover what can be done. Nevertheless, the methods of applying the iPad in learning situations is still evolving and therefore, the main motion to consider is to involve the pupils and also hear what they have to say about the matter as they might have strong insights to the learning situations as well. The teacher should not stuck to the level of utilizing ICT only in personal use but also experiment it in the classroom as well, and most likely the pedagogy behind the use will emerge in time. In other words, if the pedagogy is not clear to the educator in advance, it can appear in practise through both successes and failures in using the devices in teaching. The following section 4.4 discusses material published and released for and about the iPad, which can also be helpful in the process of learning to use and utilize iPads.

## *4.4 iPad applications and guidebooks*

*iPads in Education for Dummies* (Gliksman 2013) is a 396-pages-long, extensive piece of the topic at hand, covering everything from how to start acquainting to iPads, how to use them, how to use them in a classroom, to finding and utilizing suitable applications. However, it cannot be presumed that every teacher would take the time to study the guide and learn from it. Therefore, educational opportunities for teachers on ICT skills, including iPad-use, should be provided, with the support of literature and other released material as well. The iPad is a trend device these days and the literature relating to it can be found with a click of a button or a tab on a screen; the Internet is filled with all sorts of guidebooks for iPad users. However, guidebooks for educational use are rarer, and ever rarer are those published in Finnish. The proficiency the teachers gain usually comes through self-driven learning or in educations held by other teachers.

Nonetheless, also in Finland multiple projects have been conducted about the use of iPads in education. One of these projects is the *Sormet*-project which is an on-going scheme since the beginning of the decade 2010, and co-exists with multiple side-projects (*Sormet 2*, *Tabet*), which are all financed by the Finnish National Board of Education. (Sormet 2011) The scholars on these projects have published multiple articles and write up-to-date blogs, and one of the most relevant publication for the present study is the series of guidebooks on iPad-use, called *Sormeilua.* This series, *Sormeilua: Vinkkejä, ideoita, ja tietoa iPadin hyödyntämisestä oppimisessa ja opetuksessa,* which can also be found in a printed form, guides a teacher of any subject into the world of effective use of the iPads in teaching (Kainulainen and Kilpiä 2012, Kainulainen et al. 2013). It is also mentioned in the second guidebook that at that time, in 2013, the second book might have been the only Finnish book on the topic, which could be downloaded from iBooks for free. The guidebooks cover the basics of the device itself, the instructions of how to use the device and additionally discuss several applications designed for educational purposes. Guidebooks such as these is what teachers need today, practical tips and exemplary models to teaching.

The second guidebook *Sormeilua 2* (Kainulainen et al. 2013) discusses the core of iPads, applications, in one section and implies that when using correct applications, to the pupil the iPad can provide a new learning platform including media devices, and social interaction and communication environment. Applications can be designed for a certain subject, be media-focused tools, function as co-operational apps, work as a tool in

assessment and feedback giving, or enable sharing the content of the device (Kainulainen et al. 2013: 15). Finding suitable and useful apps is usually done by testing the applications first before installing them to every device. Most applications have a free version available, when the test-use is easy and free-of-charge.

However, a downside to these free versions is that they include advertisements with them, usually promoting the chargeable, full version of the application, and appear to the screen of the device in some form from time to time. In long-term use these advertisements can have a negative effect on learning: they can be a distraction during the learning process and affect the overall motivation to use the app in general. However, in some cases this is inevitable as if the purchase of the chargeable version is not necessary and the free version is otherwise utilizable. This phenomenon can be compared to webpages on the Internet which open a pop-up window or a new tab with some commercial on it, and can repeat the effect on every click. Nonetheless, iPad- applications can be downloaded from *iTunes* and they have informative homepages with reviews about them, and therefore, one can read and see pictures of the app before downloading it. The guide *Sormeilua 2* lists multiple apps suitable interdisciplinary for education and next few, especially suitable for English language learning and oral communication, applications are introduced.

Productive applications, as in with which pupils create something by using their own language skills, are for example *Book Creator* (Red Jumper Studio 2014), *Keynote* (Apple 2014c) and *Explain Everything* (MorrisCooke 2014). What is special with these applications is the feature of sharing they enable: they are advertised as presentation applications as well as productive applications (Kainulainen et al. 2013). These apps process multiple media forms and also a variety of presentation forms can be produced. The simplest aim in using these, and from which the teachers usually start at, is a common task which is completed by using a tablet computer, for example a text document is created instead of a printed or hand-written version. In this scenario, the learning aim has not changed in any other way than changing the medium to produce it with, which can be enough at the beginning of learning how to use, for example new devices. Still, using a device is not strong enough reason to keep utilizing technology but some pedagogy should exist behind the tasks. For instance with *Explain Everything* or *Book Creator* the documents can include moving pictures or sounds in them. Therefore, in these cases pupils would be creating something new for a different purpose and in different form than before: then the documents could be shared with class friends or posted on the group’s blog, or printed out as a complete book.

The presentation applications enable multiple new ways of creating presentations to be saved and shared, and with new technology the projects can be retrieved from the saving destination after a long time and be utilized again. Hence, using and utilizing applications and new devices enable an effortless saving of the pupils' projects and products and the possibility of using them again later, without the piles of paper and folders.

Other media applications, such as *iMovie* (Apple 2014b) and *Puppet Pals 2* (Polishedplay 2012), which will be discussed in the data gathering section, are for example *Animation Studio* (miSoft 2014) and *Garage Band* (Apple 2014a). *Animation Studio*- application's idea is to create a simple animation by using ready-set characters or the user's own drawing as a character. *Garage Band,* then again, emphasizes in addition to creativity, collaboration when using the application. The aim is to create music in any level and form, from singular notes to complete pieces of music. In both of these eternal sources of audio can be utilized, which can be for example recording of the pupils' speech. In general, media applications can be utilized as construction tools (Lim and Tay 2003) in lessons when the aim is to create something by using an application or, on the contrary, the learning aim can focus on media education, when pupils learn the correct use of technology (Kainulainen et al. 2013). All in all, the quantity and quality of applications is vast and dozens of new applications come to markets each day: the total amount of applications in the AppStore from the beginning of the year 2013 to this date, has increased by almost 400 000. This reflects well again the need of guidebooks or any sort of output of educators and other users about the use of applications as well as any mobile device, to be shared in public, as the field of mobile technology in education has exceeded in such a pace that it has been, and still is, easy to fall behind in the progress.

As a final section of the chapter 4, a variety of previous studies conducted about the use of iPads in education are presented. Both, studies conducted nationally and internationally, will be discussed. As the point of view cannot be completely a national one and the international one omitted, it implies that enough Finnish studies on the subject do not exist and the present study is relevant to fill in the gap there. However, in this way a broader picture of the issue is being provided.

## *4.5 Previous research on iPads in primary education*

As the tablet devices became more general at the beginning of the latest decade, it created a new study area in the field of mobile technology. Nonetheless, the previous studies on the use of iPads in education and the literature offered to educators mostly exists in

foreign languages and the need for studies in Finland, and specifically studies presenting the pupils' perspective are needed. Furthermore, this section describes the possible ways of using iPads in education and the features of the iPad that promote it to be used for educational purposes through previous studies conducted and with their findings on the matter. Some of which have gained positive results and some studies more discouraging ones. The data collected and analysed in the present study about the same issue will be then again discussed in chapters 6 and 7.

A Norwegian study in 2012 examined the use of iPads in schooling with children between 8 and 12 years old, or *tweens*, with the approach whether the iPad is a desirable learning tool or not (Culén and Gasparini 2012). The methods for the study were observation, interviews, simple additional surveys, and partial participation. The most emerging result of the cases was the difference between students and the teachers' perceptions after the study period: the students were content with their results but the teachers were not, regarding the learning result. The effect of novelty is brought up in the study as well and mentioned teachers saying that after the thrill weakens, they have to face a lot difficulties relating to learning and teaching. Two different cases were studied: older children (6th grade) aiming to design their own application for the iPad and younger children (5th grade) using a storytelling app, Puppet Pals.

Due to the similarity to the present study, merely the results of the latter case will be discussed further. The results report the enthusiasm of the pupils when using the Puppet Pals- application: finding pictures to use as their characters, creating the story and likewise when presenting their products to other on the IWB. However, here the findings collide between the participants: pupils were eager and happy to use the device and app but the teacher saw almost a chaos in the classroom: too many alternatives were given to the children which effected their working and ending up with poor results. Also, other reported results are that pupils would have preferred to use the device alone or in pairs, instead of groups, some technical difficulties were met as well which affected slightly negatively the attitudes towards using the device, but all in all, pupils would repeat the task but teachers would not. (Culén and Gasparini 2012) These are similar to the findings of the present study as well, which will be discussed in the chapter 6.

Henderson and Yeow (2012) conducted a study in New Zealand in a primary school where iPads were deployed to a classroom with 5-12 year-old pupils. The study examines two angles: the educational side of the use and the side of IT-management of the devices, and

the data was collected as semi-structured interviews with pupils and teachers. The study is an explanatory case study focusing on explaining the reasons behind using iPads in the classroom and the possible issues involved. The results show that the most common use of the device is web browsing and then displaying the online-found information in some form of presentation, for example *KeyNote* (Apple 2014c), which is similar to Microsoft's *PowerPoint* (Microsoft Office 2014). Another reported usages of the iPad are gaming applications, used especially with young pupils, and reading e-books. The teachers commented about the effects of the iPad on learning that it was not seen as a tool to improve pupils' grades but as a tool to be productive and making things more accessible and possible: ease the learning with the applications.

Moreover, the devices were used both individually and in pairs or groups. Problems with different ways of using the devices were confronted when used in groups and the most dominant pupil in the group hogged the device. Also, the distraction problem of pupils doing something else they are supposed to, is admitted in the results as well. Moreover, likewise the ways of controlling the apparatus are also discussed: iPads can be incorporated with a reward system, which means granting for example playing time when been behaving well, and laying down rules when using the iPads in the classroom, for example when a pupil is not using the device it is turned around, the screen facing the table. The teachers of the study discarded the novelty effect and mentioned that pupils got used to device but not get bored with it, although this cannot be guaranteed as the device had been in use for a few months. All in all, criticisms about the results is discussed by the scholars themselves and the lack of mobility in the use is mentioned: the iPad was not utilized as a mobile device as it was mostly only used inside the classroom in this school. As a final note Henderson and Yeow conclude that the iPad should not be expected to replace every other device and problems cannot be avoided when dealing with technology. (Henderson and Yeow 2012)

Another, American study, conducted in 2010, deals with the topic of children using technology when drawing in school. The study does not state the model of tablet computer used and therefore the results can mostly be regarded as general issues found about the use of tablet computers such as the iPad. The study’s participants were 41 children, ages 3 to 6 years, and they used the tablet computers in preschool for six weeks. The results report that a tablet computer and it stylus-interfaced technology was preferred over drawing with a computer and its mouse. The use of stylus resulted in more expressions in the drawings after the children learned that the stylus responds to the pressure made by

hand-movements. Also, the level of engagement is reported to having increased with age and in general the excitement of the children when using the tablet computers was beyond the teachers' expectations. (Matthews and Seow 2007, as quoted in Couse and Chen 2010) The ease of using a tablet computer with young learners might be the result of that because technology has always been a part of their lives and they take after it differently than older children: older children might be more comfortable with pen-and-paper-tasks whereas younger children can take up a stylus and a tablet as easily (Couse and Chen 2010).

To sum up, recent studies have been conducted regarding the use of iPads in schooling but most of them still are studies examining the issue in a general level. A usual study covers briefly all the aspects of the topic, instead of focusing on one. In other words, as the phenomenon of mobile technology and devices is new, the base for the study field must be created first but the future studies have the opportunity of narrowing the approach of the studies and offer insights on more specific issues. All in all, the previous research include studied promoting the use of iPads and tablet computers in general, as they enable easy modification to learning situations and environments, but also studies with results reporting disadvantages of using the iPads exists. These studies argue against the promotion of iPads with the difficulties brought by these devices: the distraction of the pupils by the device and the restlessness in the learning atmosphere. Despite the nature of the findings, more research is needed. Nonetheless, the next chapter moves on to the present study and presents the methodological framework of the present study and discusses both the data collection and analysis phases.

# 5 THE RESEARCH DESIGN

This chapter introduces the framework of the present study: research questions, the aim of the study and the design and methodology of data collection and analysis. The study was conducted as a qualitative research and different methods were used: observing and recording lessons, and a semi-structured group interview. As the data was collected mainly by classroom recording it was logical consider the observation of the lessons partially as a method as well. The methods will be discussed separately in the following sections. The first part 5.1 presents the overall motive and idea of the study and the structure of the data collection. In the second part 5.2 the participants of the study will be introduced. The reasons for choosing recording and interviewing as methods will be reviewed in the next three sections. The final part 5.4 deals with the methodology for analysing the collected data: the method of content analysis.

## *5.1 The purpose of the study*

The motivation for this study came from the interest to approach a relatively new research area from a less explored point of view. The aim of the study is to research the role of ICT in English lessons from the pupil's perspective. The amount and degree of technology in education has been increasing for decades but today, at the latest, its presence ought to be accepted. Dede (2007) emphasizes the point that IT is not on its way to replace traditional teaching methods but should be used to support these methods and increase their effectiveness in this way. Also, the achievements made today in the field of technology prove that no-one can claim anymore that the use of technology would be pointless. “By using IT properly in the classroom, teaching and learning are enhanced and given a new dimension (McNeely 2005: 41*).* In general the area of ICT in schooling is not a rare research theme but to place the research on elementary school level and study the pupil's voice is rarer. A few major long-term studies, for example *STEPS* (2007) by the European Commission in 2007, which cover the use of ICT in primary education from multiple angles, or books about the topic, for example *Using ICT in primary education* by Carol Elston (2009), published in 2009 covering a vast take-out to the topic, have been published in the 20th century, but still, both of these pieces lack the stress on the perception of the pupil in their point of views.

Moreover, the approach in the majority of the previous studies conducted so far has been from the teacher’s side: how do teachers feel about the role of informational technology in the classroom or what kind of methods of instructions teachers use, or how can teachers keep up-to-date with the vast pace of ICT. The present study, on the contrary, approaches the issue of ICT in the classroom from the pupil's viewpoint. The aim was to gather concrete data of how ICT is present in an elementary school English lessons and discuss the topic and analysis the data according to the following research questions:

- What are elementary school pupils', ages 10-11, thoughts about ICT, especially about the use of iPads, in school?

- How can the exemplary iPad- applications be used in practising English oral communication?

- What do the iPads change, replace or enable in learning situations compared to traditional methods and previous devices?

## *5.2 Participants*

The participants for the present study included 18 pupils in their fifth year (ages 10-11) of elementary school in Central Finland. They have started English studies in the third grade (ages 9-10) and in the autumn 2013, when the data was collected, began their third year of studying the language. Their teacher has been teaching the group from the third grade and I have likewise taught the pupils in the grades three, four and five as a teacher trainee or a substitute teacher.

The data was collected covering two angles: the data of the whole class and the data of six individual pupils, divided into three specific pairs. The pairs were decided beforehand with the notion of observing pupils, one pair of pupils who are somewhat weaker than average pupils, a pair whose language skills are average, and a pair whose language skills are above the average level. Yet, the pupils all received the same instructions in the lessons, worked similarly individually or in pairs when required and used the same device: the iPad (see the specifications of the device in appendix 3). In the next chapter the tasks done in the lessons and ways of collecting the data will be discussed in more detail.

As the emphasis of the present study is the viewpoint of the pupil, the role of the teacher was not in the centre of the data collecting. Nevertheless, as a noteworthy comment associating to the validity of the study, it has to be mentioned that the English teacher in question is very interested in ICT and has a so-called pioneer status in the school, for example, by acting as the administrator for the iPads of the school and as an educator of a certain brand of IWBs in Finland. The teacher educates oneself continuously and additionally instructs the other teachers in IT-related issues. This note is just to frame the background of the participant group. Therefore, this particular group can be said to be used to having ICT integrated into their English lessons and accustomed to using different devices, including IWBs and laptops. However, the iPad is the newest addition the school and classroom's technical infrastructure, and therefore a new device for the pupils as well.

## *5.3 The methods for gathering data*

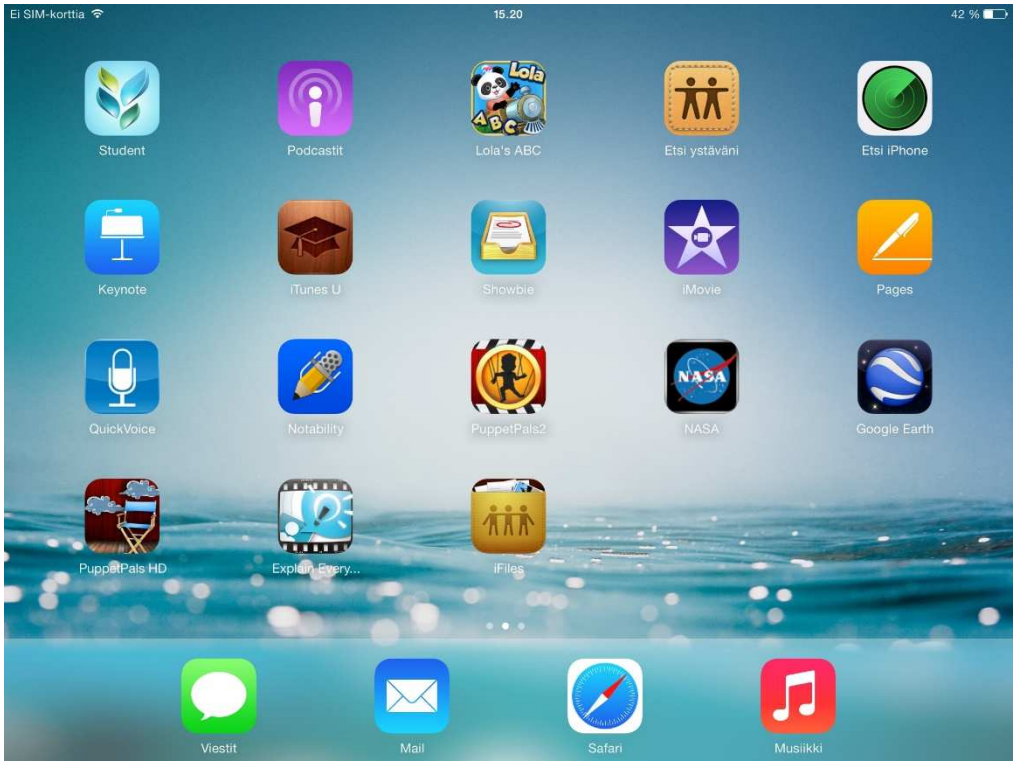
This section covers the descriptions of the methods used during both the data collection phase and data analysing phase. The data for the present study was collected during three weeks in October 2013. I observed and recorded three English lessons of the focus group. In addition to recording lessons, a group interview (also known as a focus-group interview), which was both video and audio recorded, was my other main method for collecting data.

The methods were chosen based on the requirements of the method being suitable when working with children. Even though, the group studied is used to having people observing and/or recording their lessons, I chose methods which would not intimidate the pupils.

### 5.3.1 The applications used in the lessons

The base of operating an iPad, or any tablet computer, is the use of applications. The applications on the iPad are placed on the device's screens as square icons (Picture 1). By pressing the icons, the application starts to run. The applications can be categorized in files under a file icon on the screens or then placed on different screens according to the user's wishes. This section introduces the applications used in the lessons when data was collected.

Picture 1: A print screen picture of an iPad's screen.

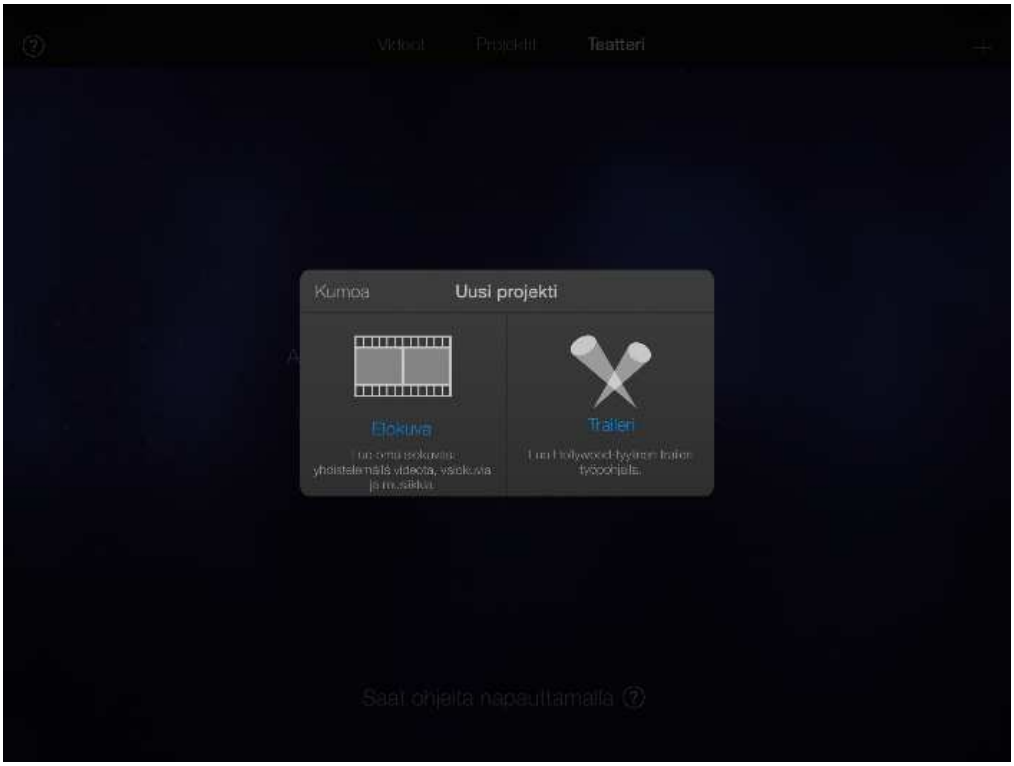



Ways of teaching oral communication today varies. Due to the increase of ICT in education, the amount of electronic material has also increased: a lot of publishers offer a material set online, in addition to textbooks. Mostly they cover the books' tasks and provide multiple ways of, for example, checking correct answers or going through the tasks. In addition, they include extra elements, which cannot be found in the books and these can be, for example, audio elements. The touchable interface of the iPad works well with online material as in elementary level the tasks are short and do not require long

pieces of writing, which could be more demanding with the interface's clumsiness for text processing. In other words, the case of text processing or production only with the iPad without a detachable keyboard or stylus could be complex for a young pupil. Nevertheless, for short and interactive tasks the iPad works well. Moreover, as the target users are young, language learning is executed a lot through playing and games in primary education. The iPad is a very suitable device in this purpose, and a lot of application are game-like educational *apps*. Apple's own store where applications can be downloaded from, AppStore, keeps a list of the number and types of applications available. In March 2014 they listed having 937 706 active applications and 195 922 games, in total of 1 133 628 down-loadable items. Top-categories are *Games* and *Education*, which obtain approximately 18% and 10% of the store's content, altogether 311 870 applications. (148Apps 2014)

An Apple application *iMovie* (Apple 2014b) was used in the first lesson, which is a media application suitable for both leisure and educational use (Kainulainen, et al. 2013). The *iMovie*- application's strengths are its multiple forms the movies can be created in, a simple user-interface (Picture 2) and the ready effect sounds to be applied to movies.

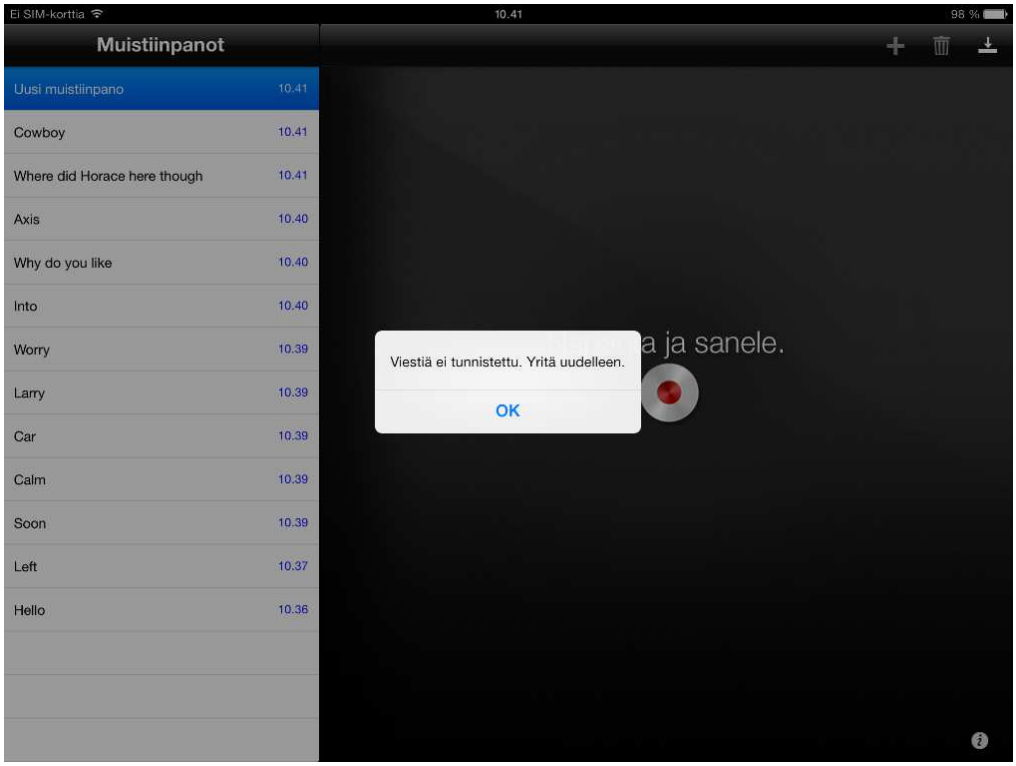
Picture 2: A menu screen of *iMovie*- application.



The possibility to create a real-like trailer of the users own movies is also an advertised, user-appealing feature of the app. In the first lesson the use of *iMovie* was supported by a teacher's demonstration of the use and additional printed instructions for the activities. The teacher quickly showed the features of the application on the *SmartBoard* (Smart Technologies 2014) by connecting the teacher's own iPad into the document camera, which projected the screen of the iPad to the canvas of the IWB and where the whole group could see the demonstration.

*Dragon Dictation* - application (Nuance 2014) was used in the second lesson, in order to see more independent working from the pupils. Also, the *Dragon Dictation* represents a feature attributable to why utilizing mobile technology can be seen as effective: the application provides immediate feedback and reports any malfunctions as well (Picture 3). The *Dragon Dictation* is a voice recognition application which turns speech into text (Nuance 2014). In educational purposes the application can be used effectively especially in practising pronunciation, as was done in the data collection lesson.

Picture 3: A print screen picture of *Dragon Dictation*- application.




*Puppet Pals 2* (Polishedplay 2012) was the third application used during the data collection and was used with an interactive pair-task of movie making. The *Puppet Pals 2* is an application where pupils can move characters on the screen with the movements of their fingers on ready-created platforms. The application has numerous ways of use in

educational purposes and it can be used, for example, in practising oral skills or storytelling, or making book reports. Main idea of the app lies in the format of movie making: pupils can choose or create characters and settings, and then create any kind of movie they are instructed to create (Picture 4). *Magical Movie Making. Your imagination is the limit!* (Polishedplay 2012)

Picture 4: A print screen picture of a pupil's iPad screen when using the *Puppet Pals 2*- application.

### 5.3.2 Observing and recording lessons

I observed and recorded three English lessons during two weeks. I participated in each lesson and observed alongside the recording the general atmosphere of the classroom, which was my purpose from the beginning. By observing the classroom and the behaviour of the pupils, I would receive additional data for the study, and observation was a suitable method for this aim as it does not involve the researcher to communicate with the respondents and therefore cannot effect to the course of situations (Kothari 2004). The lessons had two requirements: they would include a section when iPads would be used and the tasks would concentrate on practicing English oral skills. The lessons were recorded by using an iPad as the recording device because it obligated me to operate the user-interface and the applications which the pupils were correspondingly using.

I planned the tasks to be done in each lesson in co-operation with the teacher and then recorded mostly those parts of the lessons when the task was instructed and the iPads were used. Also, I negotiated with the teacher on how to integrate the tasks into the lessons and what kind of instructions the pupils would receive. However, as the aim of this study is not to observe the behaviour or thought of the teacher or the pupils' use of English, the instructions or preparations of the teacher are not discussed in more detail. The recorded material does include moments before the actual iPad- session of the lesson, for example instructions for the tasks, because I reckoned it would be beneficial for me when I would begin the data analysing phase months after the data collection. In spite of this, the data discussed in the following chapter will only include relevant parts, as in pupils' behaviour and principally everything else than classroom management-related issues, of the recorded material.

The recording of the lessons was not piloted, which would have been wise, because of the same reason I could not observe the group in advance: the iPad- trolley circulates in the school and the iPad I was able to use as a recording device was one of the devices in the trolley. Moreover, the preparations for the lessons were merely mental notes because the iPads arrived to the class just minutes before the first recording. Furthermore, all of the lessons had a preceding lesson in the same classroom and therefore, the amount of time to prepare for the recording was limited. The most challenging issue about the recording was the positioning of the iPads: they cannot be attached to a tripod like a video camera, and therefore, alternative solutions were made. In addition, I decided to use iPads for the recording as they would not be so apparent in the classroom as separate video cameras. However, the outcome was not as expected and the devices were not as unnoticeable as hoped for. All in all, the main point of the recordings was to record the actions of the three target pairs and more or less of the general atmosphere in the classroom.

I had a different amount of iPads recording in every lesson as the purpose and practical aspects of the recording became clearer after each lesson. I had the iPads recording in two different ways: from a fixed position or a handheld device. A fixed position, or a stationary device, means that the device was not moved during the lesson but it recorded non-stop from where it was placed in the beginning of the lesson. A handheld device means an iPad that was used by me or the teacher to record the lessons while moving around the classroom.

In the first class there were five devices recording from a fixed position and two handheld devices. The preparations were poorly made so a lot of the time went to organizing and then winging it in the situation. Some of the iPads were hard to place as the posture is not that easy to change. The amount of seven devices was too extensive to record one lesson but it was the first time recording with iPads, so I tested different angles where from to record. Some of the devices were, for example, on top of book piles and some at the highest shelf of a bookshelf. What is more, the data was not restored from all of these devices but the content of three of them was saved. Moreover, another intricacy was to transfer the files into a readable format and storage. I ended up using *Dropbox* cloud service (Dropbox 2014). First data collection consists of at least four files of general footage and then three files are the products the focus pupils (three target pairs). In the second lesson there were three stationary devices and two handheld, from all of which the recorded data was restored. The task was better and the preparations for recording also went better. The application used was *Dragon Dictation* (Nuance 2014). On the third lesson the data was collected with and saved from three stationed devices and one handheld device. The recording process and result were the most successful on the third time.

Observing the class in advance would have been useful as well but not possible as the iPad- trolley is used collectively in the school and an individual teacher can only hold them for a certain period of time and the group had it in their use only in those lessons when the data was collected. However, the observation was supposed to be uncontrolled and the recording to be the main data collection method and therefore the lack of observation practise was not harmful for the data gathering (Kothari 2004). The group and the teacher being familiar to me in advance also provided an advantage in the study: as I already knew about the group's dynamics, observing the group was relatively effortless (Blommaert and Jie 2010). Blommaert and Jie (2010) also discuss the negative effects the recording devices might have on the participants but as mentioned above, this group is used to being video recorded and observed. During the time in the classroom I did not focus on anything specific but rather observed the prevailing situation. The filmed material of the lessons was also used in the group interview, which was conducted on the following week of the last lesson recording.

### 5.3.3 The group interview

Another major data collection method was a group interview, in which six pupils took part. A group interview, or a group discussion, has been proven to work well with children because the children have their peer support in the situation (Holstein and Gubrium 2003). The interview lasted for approximately 30 minutes, which included some warm-up discussion, going-through the interview questions prepared before-hand and watching a few of the video clips recorded earlier in the past three English lessons when the pupils used iPads. The structure of the interview was semi-structured. I had formed some categorized interview questions for the pupils as a precaution but they were all open-ended so the pupils would have the freedom to form their answers independently (see the semi-structured interview form in appendix 1). In addition, most of the questions were formed in a way that they could not have been answered with a YES/NO – answer. "Also, non-directed questions provide more opportunity for children in group interviews to collaborate in their answers and to expand on the responses of others." (Holstein and Gubrium 2003: 36). Therefore, I was prepared for new questions to arise during the interview and also encouraged the pupils to introduce new topics and comment freely on any topic at hand.

Marshall and Rossman (2006) discuss that in a qualitative research, interviewing is an effective way of gathering supporting data to for example recorded material. Interviewing captures the outlook of the subject of the study and the interviewer cannot affect the result of the discussion. Especially qualitative research interviews are usually "more like conversations than formal events with predetermined response categories" (Marshall and Rossman 2006: 101). By arranging the interview to be a group situation I created a natural environment for the young pupils. Children feel more relaxed in group setting and that way can communicate and share information to others naturally (Holmes 1998, cited in Holstein and Gubrium 2003). Hence, by letting the pupils answer the questions as a group, I enabled more natural and substantial content in the responses. Also, even though these individuals know me pre- study already, the fact that they *outnumber* the adults in the situation gives them more comfortable feeling during the interview. The role of the adult is moreover weakened because of the group situation, where "there is less chance for a researcher to impose adult interpretations and language on the young people if they are interviewed collectively and have the opportunity to develop and convey aspects of peer culture in their talk". (Holstein and Gubrium 2003: 6)

However, interviewing children in a school environment placed its own challenges, as it can be hard for children then to separate the interview from school work and act accordingly: the children can for example aim to answer correctly to the interview questions in the same manner as they would to questions presented by the teacher in lessons (Cappello 2005: 171). When interviewing children they can see themselves as being an important part of the study and feel that their insights have an effect on the study. As Kortesluoma, Hentinen and Nikkonen (2003: 434) note: “Studies of children have a long history, but the literature related to young children consists for the most part of studies on rather than with children and taking little account of what is regarded as significant and meaningful by children themselves”. This technique was used in the data collection lessons as well, when the teacher reminded the pupils that the lessons would provide the data for the present study. As the thoughts and conceptions of the pupils is the main point of the present study, a group interview was an effective and clear method in “accessing children's perspectives” (Kortesluoma et al. 2003: 435).

All in all, choosing an interview as a data collection method enabled flexibility within the situation. Every situation is adjustable and the course of the conversation can be modelled according to the respondents responds (Hirsjärvi, Remes and Sajavaara 2003). Also, as the topic or the approach of the present study is rather novel, I thought it would be best to have flexible methods as well: there were no absolute answers I was counting on. Even though research shows that short-length interviews can sometimes be replaced by questionnaires (Hirsjärvi et al. 2003), a group interview was the most suitable methods for the study's purposes because of the young age of the interviewees. Also, the aim for the present study is to paint a picture of one group of 10 to 11-year-old pupils' views on ICT and behaviour in English lessons and therefore, an interview without the aim to generalize the answers, was suitable choice for the study.

## *5.4 Methods for analysing the data*

The method used for analysing the collected data was content analysis, which was mainly carried out by analysing the transcriptions of the lesson and interview recordings, in addition to watching the recordings of the lessons repeatedly. The interview was roughly transcribed first, following the main-point-transcription of the recorded lesson material.

A qualitative study bases on logical thinking and deduction, which starts with going through the data collected, choosing relevant parts of it and reforming them to a coherent body. Thus, content analysis was chosen as a method due to its suitability for analysing

unstructured data and that it enables objective and systematic way of examining the data (Tuomi and Sarajärvi 2002: 105). The data in content analysis can be any sort of document: articles, diaries, speeches and in the present study's case, a transcribed interview and several lesson recordings. The data was analysed through inductive content analysis method, which aims in providing a written and clarified description of the issue being examined. Everything relevant to the framework of the study is described in a way that the informative value increases, because not all of the data gathered is dealt with.

The lessons were recorded from multiple shooting angles and therefore transcribing all of the data was not possible or suitable for the analysis phase. The video recorded data was transcribed by making notes under three categories, categorized according to the research questions' topics: classroom atmosphere and dynamics, Apple applications and the use of the device. In addition, a fourth, viewless, section was created as well in order to write down any additional or probable relevant issues as well. The recordings were categorized one lesson and one recording device's material at a time. For example, the third lesson's data was processed/reviewed in the following order: the iPad recording the majority of the class from the back of the classroom; the iPad recording in front of the class, directed to shoot two of the focus group's pairs; the iPad recording the third focus group pair sitting at the back of the classroom; and the iPad used as a handheld recording device. Records were made of all of the material according to the three categories mentioned above. The interview's notes, which were transcribed earlier, were also categorized according to the four sections. In the next chapter the findings of the analysis phase will be discussed in more detail. The classroom recordings are the main data resource and the interview data is used to complement the findings.

The data collected was all in a recorded form and I began examining it by dividing it to pieces and looking for results, which is the base of content analysis (Tuomi and Sarajärvi 2002). As the interview had a semi-structured structure, I transcribed the interview likewise in a semi-structured manner. I transcribed the data using two sources: the recorded video and audio files. The interview was transcribed first by watching the video in clips first to see who is speaking and writing down what I heard then and then I filled in the transcription by listening to the clearer audio format. The recorded lessons were transcribed according to the data in video recorded format. I had to make several decisions regarding the nature of the transcription, which would also affect the analysing phase of the study. The decisions made were about time-efficiency, the communicative content of the data, the readability of the processed data and the accuracy of the transcription (see

more Ruusuvuori, Nikander and Hyvärinen 2010). Moreover, a more rough and simple way was chosen because I wanted the transcriptions to be easy to read and analyse.

Then again, the risk of transcribing is simplifying the content by omitting something relevant. The interview being the main insight to the views of pupils, I therefore can count that everything relevant was transcribed and only some gap filling sounds or words were left out, in addition to editing some minor expression simplifications. The transcriptions were made straightforwardly with the goal of getting the data into a form in which it would be easier to analyse. I followed the main principles of transcribing but did not pay any specific attention to details or advanced way of transcribing: rising intonation, pauses in speech, body language or self-corrections made. The reason for this was that the emphasis of the study or the methods are not conversation analysis-oriented but to examine views and attitudes. Transcribing the interviews was easier than the lesson recordings because the setting was planned and the course of an interview is more predictable and forefront than a whole language lesson. The whole process still was time consuming but helped the next phase, analysing the data, a lot because I already went through the data once while transcribing - as in reading is done in phases, the transcribing was glimpsing. Parts of the transcriptions will be a part of the following section where the data analysis is discussed in more detail.

# 6 THE LEARNING SITUATIONS AND PUPILS' BEHAVIOUR

This chapter presents the findings of the role of ICT and more specifically, the use of iPads, in an elementary school English classroom. The findings are presented mostly by focusing on the six pupils, who were observed more closely during the study and who also participated in the group interview, and their actions and behaviour during the lessons. The pairs were chosen for the study according to the level of their English language skill: weak, intermediate and good. However, this judgment is based on the teacher's evaluation regarding to this specific group and its status and the level of these specific three pairs within the group. Any other assessment, as for example official guidelines of Common European Framework of References for Languages (CEFR 2003) is not the base to the selection in any other way than within the teacher's proficiency. In other words, in a general level all of the focus group's pupils are in a normal level in their language skill development and no-one has a language learning disability of any kind but the pupils can be separated to different levels anyhow, as the skills do vary that much when being compared.

Hence, the abbreviations of **W, I** and **G: Weak, Intermediate** or **Good**, will be used to refer to a pupil according to the language skill level, which, still do not refer literally to the level of one's skill. These abbreviations will be linked to numbers which indicate that they refer to different pupils, and for example, W1 refers to a pupil with weak language skills, and G2 to a pupil with good language skills. Abbreviation PP + W, I or G will refer then to a pair of pupils, for example PPW means the pair of pupils with weak language skills and PPG pupils with good language skills. The pairs with **good** and **weak** language skills are male and the pair with **intermediate** skills are female. As it is not a focus of the present study, one can speculate how much it has to do with the issue that the pair with good language skills were the most participant pupils in the interview. Although, it can likewise be a gender question as the boys were speaking more than the girls in the interview in general as well.

This chapter focuses on describing each of the recorded lessons and discuss the similarities and differences between the learning situations in the classroom. The first lesson's activity was a pair task using an application called *iMovie* (Apple 2014b), the second class' task was done individually with the application *Dragon Dictation* (Nuance 2014), and in the third class the pupils worked in pairs again with a *Puppet Pals 2* – application (Polishedplay 2012). The data gathered from the lessons was collected during the moments when iPads were used in oral communication tasks, which in each lesson was at least half of the lesson's duration (approximately 20 minutes). Also, the instructions before the task were recorded but only referred to if necessary. Also, the theoretical background discussed in chapter 2, 3 and 4 will be referred to and mostly the Finnish studies will be reviewed, as the data collection was done in a Finnish elementary school. Some other theories and studies are also discussed when relevant but the point of view of most the theoretical references are Finnish-context-bound. Moreover, all the quotations of pupils' communication are written English in the following sections, even though they would have been spoken in Finnish because the comments are short and were easy to translate with no possibility of misinterpreting the original message.

The findings are organized according to the data collection methods: the lesson recording and the interview, and summarized from the point of view of MALL in the final section. This division is also controlled by the research questions, which are the guidelines of each section's content. Thus, the aspects according to the data collection methodology are *the classroom recording* and *the group interview.* Then again, the angles within these sections are *the classroom atmosphere and dynamics*, *the use of the applications*, and *the use of*

*the tablet computer iPad*. The angles are in line with the data analysis taxonomy of the collected data. However, all the sections' emphasis varies because of the unique atmosphere and course of each lesson. Hence, even though each lesson is discussed from three, similar point of views, the topic of the parallel section vary between lessons as different issues arose during each of them. For example, the first lesson's third viewpoint: the use of the tablet computer iPad, emphasizes the nature of pair-work as it arose as an interesting theme in the lesson, whereas the second lesson's same section examines the contact between the device and the learner, because it rose to the focus in the lesson.

The findings are dealt with in 6 sections: first all of the three lessons are discussed in their own parts 6.1, 6.2 and 6.3 with sections covering the aspects of the previously mentioned angles. Then, in the part 6.4 the recorded lessons are discussed from the point of view of oral communication learning. The part 6.5 deals with the data collected and analysed from the group interview, and finally, the part 6.6 covers the aspects of MALL involved in the lessons. The following, final chapter 7 summarizes the complete present study.

## *6.1 The first lesson: iMovie*

This chapter discusses the first data collection lesson, in which this group used the iPad-tablet computers for the first time in English lessons. The task was done in pairs with one iPad per pair. The learning aim of the class was to use iPads, practice English oral communication with a textbook chapter's vocabulary. The pupils received some printed material, which included an A-B conversation exercise and the instructions on how to use *iMovie*, which they used completing the task (see appendix 4).

### 6.1.1 The learning situation and pupils' behaviour

The atmosphere was excited and quite restless in the first lesson, when the pupils knew I would begin my data collection and iPads would be used. It was the first times they would be using the device in school and the first time they would be using them in English lesson. However, in addition to the anticipation, laughter could be heard throughout the whole lesson, and therefore, one can assume that the exhilaration did not arose unnecessary negative feelings on the side. The different issues relating to the use of the iPad in education: mobility, engagement and collaboration, discussed by Henderson and Yeow (2012), could be seen in this lesson's activities and in pupils' behaviour and attitudes.

The task was to film one another in turns and ask questions in English from each other. After quick instructions the devices were handed out to the pupils and after that it became

difficult to control the class. As mentioned above, the excitement was at a high level in the lesson, which is also the reason why the full capacity of the learning was not achieved. In other words, the possibilities how the lesson could have gone were not met and especially the teacher's feelings were slightly frustrated after the lesson. Nevertheless, the pupils were enthusiastic throughout the lesson and used the device accordingly. From the moment the pupils collected the iPads, their focus did not include anything else than the device. Even tough, the focus in the task was at times lost, none of the pupils lost their focus from the device.

This issue of engagement can be considered as a disadvantage or an advantage in lessons. There are reasons behind why children can be keen on the device, which are reasons the children or any user might not be aware of, and the success of the iPad is considered to be the result of the success in the iPad's design, which is suitable for children because of its small size, light weight and appearance of a book (Henderson and Yeow 2012). The user interface is also easy for children to comprehend and the touch-screen technology is understood by children well: they know that if they touch the screen at specific points, something will happen. These features can also been seen a concern and be discussed as disadvantages when using the device with children: for instance, by raising the question that can children look after device correctly in a way that they do not break it by, for example dropping it. Also, the arguments against that the iPad can be used with children are the high cost of the device and therefore it cannot be handed to children and the weight which is too much for children to carry it. However, the design varies between different tablet computers and therefore, the arguments cannot be generalized and in some cases they can refer to relevant problems. Also, this group is formed by pupils between the ages of 10 to 11 and after the present study's data collection it is safe to say that children of those ages can handle the device well and safely. Still, younger children might have troubles, for example in carrying the device if too heavy, and therefore have limits in the ways of using the iPad. All in all, the design is mainly child-friendly and its simplicity enables it to be used in educational purposes.

On the other hand, the obstacles met during the lesson and which affected the whole setting were, for example the structure of the instructions, the time when and ways how to hand out the devices and gaining the attention of the pupils when they had received the devices. This would have required tools of knowing how to get the pupils' attention away from the devices in the middle of the lesson, which was a challenge in this lesson. A set of rules by which the purpose of the use of the iPads is made clear to the pupils could

have been one way. This English teacher otherwise has ground rules that all of the teacher's groups know and follow, and also a couple of rules about the handling of the device has been discussed with the groups but a new set, dealing with the *use* of the iPad could be added. These guidelines could follow the ones discussed by Henderson and Yeow (2012) in their article, which include for example instructions on how to use the device individually, in pairs or groups. Henderson and Yeow stress the issue that the nature of situation and the difference between situations should be made known to the pupils and therefore, they would act differently according to the situations. The main difference is between educational-use and leisure-use, which mean that iPads would be allowed to be used differently when not completing a task or activities in lessons. Henderson and Yeow (2012) also introduce the idea of using iPads as a reward system and in that case, the different use outside task-performing could be chosen by the pupils themselves, as a reward. However, this to work, the guidelines should be used from the beginning when introducing the device for the first times. Moreover, in my opinion discussing the guidelines with the pupils could aid the teaching and learning methods to work, instead of the teacher trying to implement them without involving the pupils.

Furthermore, a free atmosphere can be gained if the environment of a classroom is consistently controlled and the expectations and aims are shared with the pupils as well. Therefore, a level of control, when using technology and especially a device with which the pupil can work completely independently, ought to exist. The less control or in other words, logical approaches behind one's actions, the teacher has in the classroom, the more unproductive the pupils can be: an inappropriate use of iPads can occur if it is not controlled enough (Mifsud 2002, as quoted in Henderson and Yeow 2012: 78). Also, a factor increasing this freedom in the classroom is the possibility of moving around with the iPads, the factor of mobility (Henderson and Yeow 2012). However, in the first lesson the pupils mostly stayed in their desks but a few times the devices were shown to other pupils by lifting the device up and turning the screen towards the pupils something was showed to.

In addition, as the devices were handed out before the instructions were understood by the pupils, as they did admit it in the lesson, the moments when the teacher tried to repeat or summary the instructions for the lesson's activity, the pupils' attention was difficult to gain back. The way it was achieved was to refer multiple times to the group as a collective group and address them with their class name, which made them listen as they were not referred to as individuals. I have tried this trick and seen it work such as in this case: every

pupil must take responsibility as a participant of the group and the reputation of the group is considered, instead of the individual's own status. Also, the attention of the pupils was gained in this lesson by focusing their minds on the fact the researcher needed good data for the study and that they would be using the devices again in the following lessons as well. This technique has been studied to work with young learners as they are then being respected and their insights are made important (Kortesluoma et al. 2003). In other words, making the pupils feel respected and valued and motivating them helped in the situation. Nevertheless, as a future research topic concrete tips for the use of the iPad in lessons is a strong candidate. The first lesson's atmosphere stayed barely under the limit of the situation becoming uncontrollable but all in all, the pupils were not acting out intentionally but were excited about the iPads. This enthusiasm and its risks are discussed more in the chapter 6.5 in which an effect called a novelty effect is dealt with. The next section, then again, covers the pupils' user experience of the *iMovie*- application (Apple 2014b).

### 6.1.2 The pupils' motivation and use of the application

The use of the application *iMovie* (Apple 2014b) did not produce any major issues in the lesson and the will to perform and succeed independently in pairs was a strong element in the lesson. However, the situation when instructions were given lasted longer than anticipated and the devices were handed out too soon and therefore, the instructions were repeated multiple times. Due to this, the moments of starting the pair-work were not as fluent as they could have been and all of the pupils did not know what they were supposed start doing. Also, most of the questions asked during the lesson were about reassuring have the pupils understood the instructions correctly, and the use of the application was not the topic of the questions. Still, most of the pupils focused on using the iPad and rarely asked for any additional advice after understanding the instructions.

As the pupils' motivation clearly derived mostly from using the iPad, the task was a secondary issue in the lesson. An improvement could have been that the class would have had an introductory lesson for the use of the iPad before completing any separate tasks. Thus, the task could have been omitted from the lesson and the motivation would have been as high as it was. Also, as the time was limited and the task was not completed as expected, time run out and the videos the pupils made were never watched afterwards or utilized in the following lessons. Therefore, the task was completely a separate unity in the lesson and the pedagogy behind the task was lost. In a normal lesson, without any

data collection, this lessons could have been an initiative session to the device and the task could have existed without any other learning aims than getting to know the iPad.

Couse and Chen (2010) discuss this aspect in their paper as well and emphasize that young learners' aims are different than the aims for older learners, as the learning process is still a new process. Then gradually, the independence will be gained when the device is more familiar. However, even though the task was a not the source of the motivation and stimulation in the lesson, this effect of familiarity was seen in the lesson: one pupil showed initiative and the course of the task was altered. One of the pupils in the group suggested that why not use the front-camera of the iPad for shooting, instead of the earlier instructed rear-camera, as in then both of the pupils would fit in the screenshot. I agreed to the pupil's suggestion and the task instructions were modified accordingly and the pupils used the front-camera in their filming.

The task was completed differently between every pair as they all had different focus-spans and attitudes towards the device. Some went through the task quickly and then played with the application's functions, when some pairs completed the task several times, without any additional attention to the application's features. The pair with *good* language skills, the PPG, completed the task fluently, even though they cheated a little by looking at the answers from each other's paper. Conversely, I reckon their language skills would have been enough to complete the task without any help but the excitement of getting to use the device was to some extent too much to enable a complete focus on task-performance. The PPG were handy with the functions of the application and for example, rolling the frames of the camera roll to spots where the pupils had funny faces was done several times.

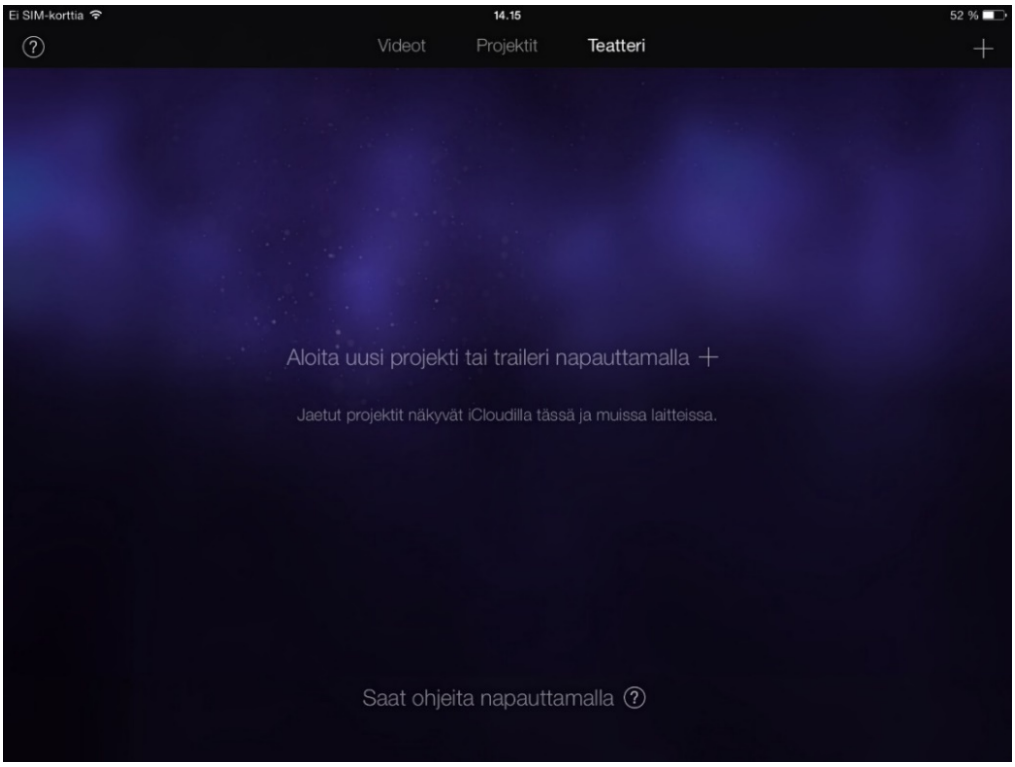
The PPI, the pair with *intermediate* language skills, conducted the task quite unsurely and in a slower pace than the PPG. The performance reflected well to the level of their weaker language skills, compared to PPG, and they wondered and hesitated with the questioning and answering. They also relied finally to the trick of showing some of the answers to each other. In addition, their focus was lost multiple times, clearly because of the simultaneous recording, and they made funny faces to the camera from time to time. Therefore, I guess the poor performance was due to the device use in the lesson and their focus was compromised too much when they had to record themselves. In this case, the goodness of the use of the front-camera when both of the pupils could see the recording all the time, could be questioned. Perhaps a better way would have been to film one

another in turns, when only one pupil at a time would see the screen. On the contrary, the pair with *weakest* language skills of the three pairs, the PPW made the best effort performing the task. Compared to the PPG or PPI, they focused on the task performance and only afterwards started playing with the device. Hence, they did lose their focus during the lesson but only after completing the compulsory activity. The only hindrance in their performance was the amount of laughter that interrupted their dialogue at times, but was also presumably brought by uncertainty. However, The PPW did the task well and also repeated it by switching roles, and the boys laughed the most only when watching their recording, which mean that their task-performance did not worsen because of the behaviour.

The application, *iMovie* (Apple 2014b), enabled pupils to work in their own pace, with their own level of effort and commitment. The *iMovie* is advertised as an educational application (148Apps 2012) and it has a variety of tutorial videos and documents available to support the use of the application. Also, most of the features and functions which are advertised as suitable for educational use are for more long-term media projects than one-lesson-tasks (Apple 2014b). Therefore, the task designed for this lesson was kept simple and only a few functions of the application were introduced. Even though the task could have been instructed in a better way, the pupils learned to use *iMovie* quickly. They filmed and saved the movies on to the camera roll fluently and could also check if the saving was successful. The application is easy to use and the symbols when touching the screen are clear, which are enabling factors for child-friendly use. Then again, the user-interface of the application could clearer as the initiation screen's buttons and parts could be organized better, when it would be user-friendly as the main parts would the most invisible and not hidden in the corners of the screen in small size (Picture 5).

The user-interface and the application's actions still are stimulating enough and they involve a lot of the user, the pupil in this case. The user can make one's own decisions about the movie to be filmed: the theme and project-style and therefore, keeping the user interested in the application has been achieved. As the application was used in its simplest way, the more complex features will not be discussed further. Also, the saving operation used is easy in the application as it offers the options of saving automatically when stopping the recording. However, all pairs could be assumed to have been concerned about their performance as the question of removing a failed video was asked during the lesson, and therefore deleting a file was not as straightforwardly clear function to the pupils as was saving the film.

Picture 5: A print screen picture of the initiation screen of *iMovie*-application.




What is more, the use of *iMovie* was limited considering the possibilities the application enables and merely two functions were applied: it was used to record and save a video clip. Therefore, the pupils did not have any questions about the application itself, except how to save the video, which mainly indicated that the pupil had listened poorly to the instructions, and no-one questioned the application in general either. Consequently, it can be assumed that the application was easy to use and more advanced options could be introduced in the future as well. An advantage of the application is that it is manufactured by Apple and therefore, there are no featuring advertisements during the use of the app, which usually is an unfortunate issue when using other free applications for the iPad. Nonetheless, using the *iMovie* enabled pupils working together and supportive behaviour was seen multiple times during the lesson. Pupils solved problems of the application use preferably together in pairs or asking help from peers, before asking the teacher. In addition, the videos or picture frames were shared with peers as well, which made the atmosphere free and fun the whole lesson. Kurland (2012) emphasizes these kind of co-operative behaviour and skills to be important to a young learner growing up in the 21st century.

All in all, a common structure in the changes of the classroom's atmosphere can be framed: first the anticipation and impatience before having the Pads, then the atmosphere relaxed when the pupils collected the devices and then the enthusiasm stayed high till the end of

the class when the pupils were almost impossible to calm down and draw their attention to homework. As a result of the simplicity of the task there were no feelings of frustration or failure involved but merely rush, enthusiasm and amusement. The recorded videos were in the centre of lessons and the pupils most enjoyed watching the videos and rolling the frames on the camera roll. There were no distraction problems regarding to an inappropriate use of the iPads: the pupils did not use it anything else, as in web-browsing, than doing the task (Henderson and Yeow 2012). The struggles and achievements relating to using the iPad are discussed in the next section, and also essential points of the second lesson are summarized at the end.

### 6.1.3 The nature of using the iPad and pair-work

The use of the device was independent, as mentioned above, of all the three pairs and in the classroom on the whole as well. The PPG used the device fluently and focused on playing with the application, which referred to that all the basic functions were under control. The PPI pair also tried to use the device as independently as possible and before turning to the teacher, they watched what others were doing and tried again following the others' lead. An incident of an independent use was, for example, when the PPI could not get any sound out of the iPad and they looked for the volume-button on the device. They did find it and turned the volume up so they could hear the sounds in their recording. The PPW was the most efficient and effort-making pair and followed the instructions well. They did mix up the first given and then altered instructions, which included changing the camera to be used and therefore, the angle to film from, but did perform the task focused. The PPW worked together efficiently, especially at the beginning of the task, and they efficiency might be the result of that they expressed out loud what should they do next and how: they talked about the buttons to press, angles to shoot from and what papers to read from. After completing the task all the pairs watched their videos multiple times and also rolled the frames on the camera roll, when seeing that others were doing that. Seeing and hearing themselves on the screen raised up emotions and most of the pupils expressed their feelings through laughter. They did not seem to be bothered about the possible mistakes they made in the task but were eager to repeat the task if they had the time.

The overall pair work had some difficulties, or possible stumbling blocks, as well because when sharing the device with another pupil, there usually is a dominant pupil who takes over the control of the situation (Henderson and Yeow 2012). This arrangement could be

noticed in the lesson as well as in each pair there existed a more active device user. Then again, variations in the patterns of behaviour could be separated also: The PPG and PPI's pupils, the male pairs, clearly were both fervent to use the device and the iPad was moved from one pupil's hands to the others, and sometimes taken from the other' hands to one's own grip. In some instances, the male pupils also negotiated the turns of using the device and when it was the time to switch the user. On the contrary, the PPI female pair, worked together all the time and the device was in shared use the whole lesson in front of both of them on the desk. Furthermore, all of the pairs worked individually in the sense that they did not ask much help from the teacher, and came up with additional activities to do after doing the task, which all still involved using the application somehow. However, the teacher did instruct to repeat the task and switch the roles in the activity (different sentences to read). Also, the pupils used the device as in hiding, in a way that no-one else could see what they were doing, which could refer to uncertainty in the use or, in other words, eagerness to learn themselves.

All in all, all the pairs had, in some level, a more active user of the device and also more of an active task-performer: for instance the G1 tried to push the G2 to focus more on the task and repeat it, I1 and I2 were both uncertain but I2 made more effort in the task-performance than I2, who lost focus from time to time, and W1 and W2 then again hid the device and their working most efficiently and focused on the task most evenly together. Furthermore, as these iPad support the multi-touchscreen technology, the simultaneous use was possible and therefore, the gap between the pupils' use was not as wide as it could be with an iPad with single-touchscreen (Henderson and Yeow 2012).

Also, limited time in the lesson framed the use of the iPad a lot and an authentic user experience of the device could not be achieved. The collection of the devices works usually always the same way, and has worked the same with other, preceding devices as well. First, the pupil writes down the device number and his/her name in a log after receiving the device, or if working in pairs, the other one collects the iPad and the other one writes down the information. Then they can start using the device according to the instructions. Finally, at the end of the class, the device's memory (any produced data) should be emptied and the iPad returned to the trolley. However, because of to the data collection in the lesson, the devices could be left on the desks and I emptied and placed them back into the trolley. Therefore, a coherent experience of the device use was not provided in this lesson, which would have been important with the purpose of succeeding familiarity of the devices to the pupils (Couse and Chen 2010).

Nonetheless, from the tool perspective, discussed in chapter 4.1, ICT was used as **a construction tool** in the lesson (Lim and Tay 2003). The aim of the iPad-use was to create a movie in which both of pupils would be speaking. The idea behind the task was to practise oral communication and to come back to it in a recorded form in a follow-up task. However, caused by the time limitations, this follow-up activity was never executed by the teacher but the pupils themselves did listen and watch their movies in the lesson. Besides, the application's simplest features were in use and therefore the style of the video could not be modified by the pupils. Yet, the length and content of the video file was different of each pair and therefore, the pupils were the only decision makers in the task. If there would have been more time, the videos could have come out as more personal and distinguish in style, which would have been more according to the main idea of supporting creativity, behind the construction tool perspective. This characterization can be seen suitable also because compared to another division, discussed also in chapter 4.1, where the tool characteristic are paralleled with a task characteristic, in this case the task performed could be described as a productive task. Hence, as the aim of the task was to product a video, these characteristics fit. All in all, using the iPad as an aiding tool in the lesson brought value to the task performing as the pupils could hear their pronunciation after completing the task and correct their possible mistakes on the next take. These videos could have also been shared through cloud services or online video services, which also support the idea of using ICT as a construction tool in lessons (Lim and Tay 2003).

To sum up, the first lesson was a textbook version of an introductory iPad-lesson, in which the pupils were excited, the teacher was without existing schemas, and the atmosphere was filled with emotions. The advantages and the disadvantages of using ICT/iPads in the lesson could be both pointed out. The advantages brought by the technology and the tablet computer were, for example the independent and engaged working of the pupils enabled by the handheld device, and the skill development which included using problem-solving and co-operative skills. Also, the stimulating application *iMovie* involved both of the pupils in the pairs to work and participate in the task. The co-operative nature of pair work was also reinforced by the device's support of multi-touchscreen technology. However, even though the possibility of collaborative use of the device, the relationship between the pupils in the pairs could not be controlled: there is usually always a more dominant person in every pair or group, which was also the case in this lesson and task-performance. Therefore, one of the disadvantages of the iPad is that as it is originally designed as a personal device, in pair or group work, the usage can divide unevenly between the pupils.

Another difficulty of iPads in this particular lesson was the enthusiasm of the pupils which interfered with parts of the lesson: giving instructions at the beginning of the lesson and homework at the end of the lesson. Also, the pupils did not experience a complete authentic classroom environment user experience of the iPads as the handling of the devices was done differently because of my data collection. All in all, this lesson showed multiple aspects and issues relating to introducing iPads to classroom use and more possibilities and developing ideas were seen than obstacles or reasons for not to use the devices. The next chapter discussed the second lesson recorded and the major difference to the first lesson is that the pupils worked alone with individual iPads.

## *6.2 The second lesson: Dragon Dictation*

This chapter describes the progress of, situations and atmosphere in the second lesson of the data collection. The application used was *Dragon Dictation* (Nuance 2014) and the task's activity was done individually. The learning aims for the lessons were to practise pronunciation with a textbook chapter's vocabulary and make the pupils' iPad's user experience clearer and better than in the previous lesson.

### 6.2.1 The atmosphere of the lesson and pupils' emotions

The course of the lesson was fairly similar than in the previous one: the homework was checked first and then the group moved on to using the iPads, after which new homework was given again. Some quick, non-technology involved tasks were also performed in this lesson before using the devices. The instructions were given and received in a more concentrated state in this lesson and the pupils were more relaxed as they would be using iPads because it was assured to them the last time. The class was divided in half during the task and one half of the pupils were allowed to go and work in the hallway's lobby, outside the classroom. The rest of the pupils worked in the classroom, including five of the six focus pupils (G2 did not attend this lesson). The task was to pronounce textbook chapter's words and sentences, and receive feedback, by using an application called the *Dragon Dictation* (Nuance 2014).

The atmosphere in the lesson was calmer than in the previous lesson and most of the pupils worked well alone the whole time. However, as much emotions were experienced as in the previous lesson but this time some negative emotions were involved as well. If the previous lesson arose feelings of enjoyment and laughter, this lesson also included emotions of frustration and failure. The level and variety of these emotions differed between pupils: the five focus pupils worked the calmest in the room and on the contrary,

some of the other pupils had a really difficult time focusing on the task. The variability of the emotions and reactions was wide as the task was done independently and therefore, it was not necessary to act according to the group or pair's reactions but each one could decide the level of commitment by themselves: practise independent learning with as much effort a chosen (Lang et al. 2007). The emotions pupils go through learning processes have been studied and likewise the effect of computers to these feelings have been the topic of studies as well. In spite of this, the pupils' point of view is a rare angle on these today's mobile technology studies and they could be explored more. The present study focuses on examining the emotions of the pupils that were brought up by the pupils themselves and therefore, all the perceived feelings during the lesson are not dealt with thoroughly. Still, the negative emotions of the pupils in this lesson were discussed in the interview and the pupils expressed their dissatisfaction to the application, which affected their task-performance. Both of these angles, the application use and the perceptions shared in the interview will be discussed in the following sections: the *Dragon Dictation* in section 6.2.2 and the interview data later in section 6.5.

The pupils realized the idea behind the task rather quickly and wanted to focus on working alone in peace. Some pupils switched desks in order to have a more separate work space and some pupils who were sitting next to each other were re-seated by the teacher. This separation into different spaces and seats aided in succeeding in the task. However, this task was ranked as the least favourite task of the data collection lessons' tasks in the interview by the focus pupils. It could be noted in many ways that the failure in using the application or in pronunciation affected the pupils a lot. Some pupils commented to themselves during the task when they succeeded or failed but in any case, a lot of commenting was heard by the pupils about their own performances during the lesson. Mostly these remarks were made by pupils who felt they were good or those who felt they did not manage at all.

The need to comment on their performance might derive from the need to share, which was not otherwise included in the task. Sharing is a major element when working with iPads and I believe the pupils had realized that as well. Though, the natural need to share and gain attention is a part of human nature and a part of classroom situations but in this case it can also be related to the device in use (Palfrey and Gasser 2013). Therefore, as the communication could not be done in pairs or groups or shared by using the device, it was shared out loud in the learning environment. Also, the pupils who lost the control of their performance became loud and with the noise they created out of frustration disturbed

the other pupils. Moreover, the comments about the task in the group interview were that it was difficult to practise the pronunciation as there was so much noise in the classroom. Moreover, at the end of the lesson, the teacher asked the pupils to show with their thumbs the level of goodness of the lesson/task and the overall result was that the lesson was *OK* or *semi-good.*

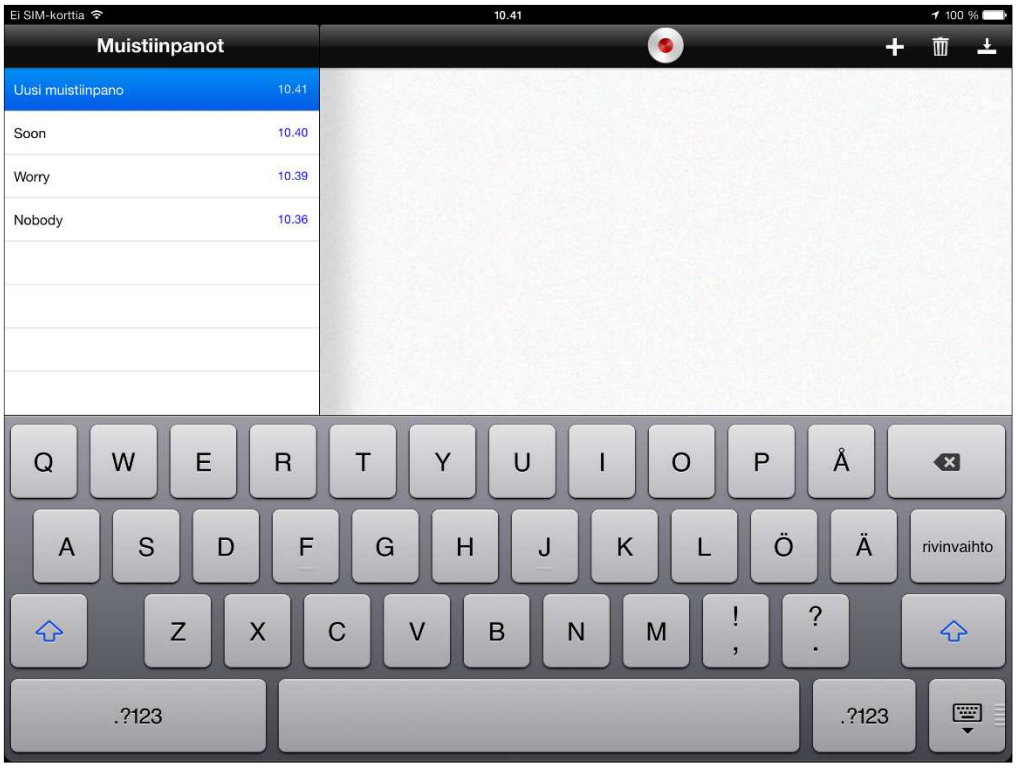
However, even though a lot of the pupils got frustrated during the lesson, it could be seen and was experienced as a unifying factor as well. In other words, if a pupil did not succeed and commented out loud about it, another pupil could come closer and agree: *This is not working at all. I can't do it. – Me neither. It just doesn't take the words.* In some instances, these pupils tried to figure out together why they did not succeed or were they doing something wrong with the device, for example, by checking the language settings. The overall judgment of the lesson was that even though the task was not that appealing to the pupils, they managed it well and perhaps due to the independent working, were more focused than in the previous lesson. There still was uncertainty in asking for help from the teacher or me and most of the pupils tried to solve the problems first by themselves or secondly asking for peer support. The teacher also commented afterwards to me that it was surprising and spectacular to notice the effort the pupils put in working together in the lesson. The teacher experienced that strongly and mentioned that the collaboration came as a result of the use of the iPads. Hence, one can conclude that the level of motivation was high in the lesson and independent learning was valued, which are issues behind an effective learning supported by ICT (STEPS: Synthesis report 2007). The next section discusses the role of the application used in the lesson in more detail.

### 6.2.2 The pupils' task-performance and use of the application

The task was more well-defined and simpler in the second lessons and the idea behind the task was not questioned, by way of was done with the instructions in the first lesson. The task had a strong aim: practising pronunciation, and the idea of using the *Dragon Dictation*- application (Nuance 2014) was on its feature of immediate feedback. The structure of the activity in more detail: a pupil pronounces a word to the device, while holding it in front of him/her, and the application turns the spoken word into written form, and feedback is received according to whether the word is correctly spelled on the screen or not (Picture 6). Originally the *Dragon Dictation* is designed as a smartphone application to be utilized in spelling messages or e-mails into written form and not as an educational application. However, the chosen application was more under criticism

during the lesson and more complaining about the app than asking for help was experienced. In addition, even though the idea behind the task and reasons for choosing the application were thought of, the same enthusiasm was not reached in this lesson than in the former one. Moreover, the task, then again, could have been yet more framed even though it was not the source of the difficulties in the lesson. The task could have been enhanced for example, by having the pupils doing it in rounds, or within same lengths of time periods, or by providing a more structured vocabulary list than *choosing the words themselves on pages X-X*. Nonetheless, the application arose more criticism than the actual task performed.

Picture 6: A print screen picture of G1's iPad's screen of *Dragon Dictation* at the beginning of the second lesson.




Moreover, as the setting for the task (too much noise) was criticized, the pupils did frustrate rather quickly than was necessary or expected, and the reason behind the emotions was most likely their failure in the task, which they perhaps could not accept so easily. An instance of this kind of behaviour was, for example, a pupil trying a couple of times to pronounce a word but then after failing, did not ask for help but questioned the goodness of the application and started playing around: shouting the words and holding the device incorrectly. The teacher had to step in to the situation and calm down the pupil by talking to him for a while. In any case, most of the negative-toned situations were formed after the feedback of the application was not in line with the quality of the

pronunciation the pupil felt he/she had performed. Yet, they were a few pupils in the classroom who succeeded well in the task and in the use of the application, and thus the blame for frustration cannot be entirely be placed on the application design. The *Dragon Dictation* is an application that supports independent learning and enables it by offering immediate feedback, to which the pupil him/herself can react to (Lang et al. 2007).

The pupils in general laid more effort on the task-performance than in the previous lesson, which might be because they all had their own iPads in use. Still, task-performances in the group could be situated on different ends of a scale as they varied quite drastically. G2 was only present of the PPG in the lesson and he was among the pupils who got frustrated during the lessons. However, G2 clearly believed in his language skills and did make an effort to work with the application but finally blamed his failure with the application's flaws. He used the iPad the whole time possible and therefore, it can be deduced that he wanted and tried to complete the task according to the instructions. G2 also expressed his frustration out loud by commenting his performance or wondering about the applications operation, for example with sentences such as *this doesn't take my words*, *well now it doesn't show anything here on the screen*, *this is taking now something really weird*, or *what is happening?*. At one point he received peer support from another pupil and together they discussed about why the application did not give the expected kind of correct feedback. After a short period of time they continued both individually practising the pronunciation. Still, G2 gave a thumbs-up evaluation of the task-performance at the end of the lesson and therefore, did not find the task or the application too complicated or unpleasant. I agree with the evaluation as the teacher did not ask to evaluate the application but the pupil's own performance during the lesson and G2 performed well and made a good effort.

The pupils focused on the task at hand better in this lesson than in the previous one. More independent involvement was seen and sharing results was not in a big role in the lesson. Mostly emotions were the issues shared and the most of them were negative emotions rather than positive ones. However, some enthusiastic screams or shouts were also heard if a pupil succeeded in pronouncing a word or a whole sentence. Moreover, the application was criticized more than the task, but some reassures were made about the instructions, for example *how many words or sentences do we say, what do I do after the first word, do I erase every note afterwards, do I say always a new word or what*. All in all, most of the questions during the lessons were about the application use and most of the advices by me or the teacher were given to individual pupils, instead of the whole group.

The PPI relied to each other's' support at the beginning of the lesson and concentrated and worked together well in beginning the task. I1 and I2 changed the required settings and practised using the application together. They obviously found it difficult and needed therefore peer support, which was also indicated by that the girls were not re-seated by the teacher or themselves. Additionally, I2's iPad did not work correctly for some reason at first and her device was replaced with another one, and therefore, I2 lost some time from task performing. The girls did not question the application at any point, not even when I2 was using the first iPad handed to her which was not working as it should have been. Yet, they did show signs of frustration but clearly wanted to succeed and tried to use the application as efficiently as possible. I1 looked disappointed in her effort when examining the feedback on the screen but still had the will to practise the whole time in the lesson. I1 was one of the pupils who practised pronunciation the most focused and did not complain in the lesson. I2 had a looser attitude about the task but still did her best, not showing strong emotions in either direction. This can, perhaps, be reflected to level of their language skills as the feeling of success was not guaranteed, compared to the feeling of a pupil with good language skills, but desired. In other words, neither I1 nor I2 assumed them to succeed in the task and therefore had to perform it with attempt. The girls did not take part to the thumbs-up evaluation at the end of the lesson for some reason.

The PPW pair was seated away from each other a moment after starting to operate with the iPads, and they sat next to each other on the different sides of a narrow aisle. Both of them worked completely independently the whole lesson and were among the pupils who were the most focused in the lesson. They did not ask any question from anyone, which can in this case read to be a sign of uncertainty. Though, I believe the use of the device or the application was not difficult for them but the actual success was behind the focus and motivation. At the end of the lesson, they both gave an up-and-down swinging thumb as an evaluation of the success in the lesson.

Elements of MALL, discussed in chapter 4.3., could be observed in the second lesson. MALL emphasizes the factors that brought about the scale of emotions in the lesson: mobility, individuality and immediate feedback. Mobility was utilized as the two halves of the group were working in a separate learning environment with the iPads. Also, as the task was designed and executed alone with pupil's personal iPad, the feature of individuality came true in this lesson as well. Additionally, the feature of immediate feedback enabled by modern technology and especially this application, was in a major part in the lesson. Moreover, the *Dragon Dictation*'s feedback is corrective feedback and

the pupil can therefore continue the independent performance according to the feedback (Lang et al. 2007). The use of this application could be developed further in educational surroundings and studied on the basis of MALL, which main ideas relate closely to the applications main features, and because of studies linking MALL to language skills are still rare. The role of MALL in the lessons and activities will be covered in section 6.6., and the link evolved between an individual pupil and an iPad will be then again discussed next in the following section.

### 6.2.3 The pupils' contact to the iPad

The second lesson involved pupils to use their own iPads independently and without any printed material. The instructions for the task were the demonstration by the teacher at the beginning of the lesson and the additional comments made during the lesson. The task required a lot of concentration from the pupils and awareness in handling the device. It was not irrelevant how the iPad was held or how the pupil's voice should have been used. Some technical difficulties were also met in the second lesson when one of the pupil's, I2, iPads did not work properly. She herself tried to fix by altering the settings and then I tried to help her but the device did not start to recognize sounds and I handed a new iPad to I2. In other words, there might have been something wrong with the microphone's settings rather than the applications setting that we were trying to change. However, it was unfortunate that it took time from I2 in practising pronunciation because of the device did not work, as otherwise I2 was doing everything according to the instructions.

From the tool perspective, introduced in the chapter 4.3, this lesson utilized ICT as *an information tool*. The information tool angle is usually perceived as searching for information and receiving information via multiple media, as in the WWW, but in this case the pupils received their information in the form of the feedback. At least this category is the closest of the tool categories formed by Lim and Tay (2003). On the other hand, this view is not supported with the other categorisation where the types of task suitable for each tool category are described, and for this particular tool category, the type of task would be a research task. Though, alternatively this task because of the nature of using the iPad could be fitted in the category of a construction tool. *A construction tool* includes a product to be produced, which in this case would be the list of pronounced words: the feedback (Barron at el. 2003, as quoted in Hsu 2011). Moreover, as the *Dragon Dictation* enables an activity which has been almost impossible or at least a lot more complex to execute before mobile technology, this lesson's task and learning situation is

hard to place in an existing category. Evident is that ICT was utilized during the lesson in a way that has not been done before, and pupils were able to work independently with corrective feedback received during the lesson, which enabled their independent development in the course of the lesson (Lang et al. 2007).

The contact to the iPads changed with the level and variations of emotions in pupils. Those pupils who stayed calm during the lesson had no difficulties handling the device but kept their movements and gestures gentle and fluent, for example rising the device closer to the mouth when pronouncing a word. On the contrary, those pupils who frustrated started exaggerating their movements and gestures and, for example raised their voice when pronouncing and flipping the device irrationally. Yet, everyone kept the contact to device the whole lesson in a way that no-one left the device anywhere or placed it on the desk or let it go of their hands. This was a good indicator of iPads functioning well as a personal device (Kainulainen and Kilpiä 2012). Also, the pupils were free to control the iPad and no-one else could take the control and this group's pupils at least seemed to enjoy and explore the opportunity to work alone with the iPad. In the interview it was also commented that this task was good because everyone had their own device.

However, the pupils likewise commented that this would have been a better task if the group size in one learning space would have been even smaller than now. The reaction to the task then again argues against the advantages of using the iPad as a personal device in education as complete peace around one pupil cannot usually be achieved in a classroom situation and as experienced here not even in smaller groups in different spaces. In other words, if the pupils would have been pleased with the arrangements, it would have supported the assumption that iPads can be used individually in different situations. Still, as iPads are designed as private devices, (Kainulainen and Kilpiä 2012) these solutions in educational use every teacher must try and approve themselves or learn from others' experiences. Some guidebooks also exist, for example a piece in the famous *Dummies*- series, *iPad in Education for Dummies* (Gliksman 2013) which is a coherent entity of the use of iPads in education but is written by an American author Sam Gliksman and therefore directed at American teachers and educators. Thus, meanwhile in Finland we are still collecting good websites and writing blogs about the use of iPads in educational purposes, and learning from pioneer teachers who travel around Finland holding trainings, and therefore, simply by sharing and trying out we are learning more about the topic.

To sum up, the second lesson was calmer in atmosphere and pupils worked well independently. In addition, the setting of the lesson shifted to more pupil-focused and the teacher's role lessened as an educator, which was seen as the increased amount of collaboration between the pupils. The English teacher was surprised and pleased with this effect the iPads resulted in. In addition to emotions of excitement and enthusiasm, negative-toned feelings were seen during this lesson. The task activity was simple and therefore the idea behind it was understood by every pupil and they all focused well on practising pronunciation. Then again, the application was not used in the surroundings it has been designed for and there was too much noise in the classroom at times for the application to work fluently.

Still, the frustration developed from the failure and receiving incorrect feedback also affected the use of the application and therefore, the amount of noise was not always the reason for the incorrect feedback of the application but it was due to the pupil's performance. This insight is supported by the occurrence that some pupils had no difficulties with the application and their feedback was correct in the lesson. Also, one technical problem could not be resulted in the lesson and one pupil's device was replaced with another one. The task to have been better, the handling of the device should have been better instructed and the difference of incorrect handling showed to the pupils as well. However, the application obtains many features emphasized by MALL (Sheng, Siau and Nah 2010) and therefore, proved to be a useful application in educational purposes as well and with familiarity the application use can become more fluent and effective. The next chapter discusses the last of the three recorded lessons, which was the most appealing to the pupils and the working was done again in pairs by using an already familiar application to the pupils, *Puppet Pals 2* (Polishedplay 2012).

## *6.3 The third lesson: Puppet Pals 2*

This chapter introduces and discusses the final, third lesson's learning aims and situations. The task for this lesson was the most expected activity by the pupils because the application was familiar to them, and it was to create a movie in pairs by using the application *Puppet Pals 2* (Polishedplay 2012). A pre-task for everyone was to decide before the lesson a character they would play in the story. The pupils got a printed hand-out at the end of the previous lesson from which they could choose the character from.

### 6.3.1 The overall settings of the learning environment and situation

The atmosphere in the classroom was hectic at the beginning of the lesson, which was probably due to the motivation to use the iPads again. Though, after collecting the iPads and again placing the pairs in two separate learning spaces, in both of the spaces the atmosphere calmed down for a while. The task was more framed than the previous ones: pupils had received a pre-task for the lesson and also a few time-frames were given during the lesson, which set a pace to the pupils' process. They did not have time to play with the application in vain but the aim was to start recording the movie as quickly as possible with the purpose of enabling another movie recording if there was time. In other words, one lesson is usually too short of a time period in order to record a good Puppet Pals-movie and the teacher and I tried to overcome this be giving the preparations for the movie as homework. However, the pupils still took more time than expected at the beginning of the lesson to choose the characters and surroundings, and the quality of the movies was not what expected after all.

The lesson proceeded as usually, although in a quicker pace as me and the teacher knew this task would need all the time possible. The instructions were again a quick but calm demonstration of the application's main features and the aim of the task: a short movie. The pupils collected their iPads and filled in a notebook which is used to log who has been using the devices and when. The teacher separated the group in two spaces again, the classroom and the hallway lobby, and after which the pupils could began working independently. The pupils moved around in their designated spaces, for example by moving to a peaceful corner or turning their desks away from the rest of the group, in order to work in peace. Mostly the task performing went well but towards the end of the lesson, a few pupils started to turn restless. One of these cases was a girl pair, in which there was a more dominant activity- performer and the other one was more or less following the lead, and at the end of the class, the more non-involved girl began to stare at the clock and time left. The other, more active girl tried to cheer up the other girl but clearly their ambitions were on a different level and the co-operation was not as smooth as it could have been: *Come on, once more. Okay, ready? - Oh, I know I'm rubbish.*

However, the most pairs worked together well but a task cannot be always be appealing to everyone. Moreover, the girl looking at the clock did not disturb anyone else's working and only did harm in her on team effort, even though the girls made a good movie, as their language skills are really good and it seemed that they had a proper dialogue planned

for the movie. The pair in question was not a focus pair of the present study and therefore, their movie is not discussed further. In any case, the iPad was enough to attract everyone's attention for the 45 minutes and the level of commitment differed within the pairs and not so much between the pairs.

There was a lot of laughter in the classroom as there was during the first lesson and this might be because of the nature of the task: it being more involving and interactive. In this lesson both the pupils in the pairs could commit evenly in performing the task as the core idea was that both of the pupils would be touching the screen simultaneously. The interactivity created by the touchable interface is studied to commit young learners well and increase creativity (Hutchison et al. 2013). As the pupils of the focus group have been identified as being part of the latest generation Y, which is characterised by their technology-focused thinking, this lesson supports the claim. All of the pupils in this group had no major difficulties in operating the device and help was asked only as a last resort, after receiving peer support as well. Still, one cannot generalize the claim either that every generation Y learner would know how to operate any device by instinct. In any case, the contact the pupils achieved with the iPads in this lesson is discussed more in section 6.3.3.

The motivation was good in the classroom and the pupils seemed focused, but afterwards in the interview the focus pupils mentioned it had been really difficult to complete the task, which will be dealt with more in the section 6.5. Still, the pupils focused on their work the entire lesson and everyone created a movie or two in the given time-frame. This strive to achieve a specific goal can be considered as a norm in school surroundings but in this case the use of ICT could be counted as an encouraging factor as well. The use of ICT has been studied to have a positive effect on learners' attitude and motivation: in this lesson the pupils rarely asked for advice and completed the task in their own way and pace, which indicates a good level of motivation and dedication (STEPS: Synthesis report 2007). The movies still did not reach the level of the group's language skills, or at least the three focus pairs' movies did not and the rest of the movies made in the group were left out of the data. Hence, the task's framework or aim should have been different if the results hoped for would have been able to come true. This angle of the application and the task is discussed more in the following section.

### 6.3.2 The pupils' co-operation and use the application

Picture 7: A print screen picture of the initiation screen of *Puppet Pals 2*- application.


The *Puppet Pals 2*- application (Polishedplay 2012) has a clear, user-friendly, guiding interface (Picture 7) and creating a movie is simple: make decision relating to the story according to the screens presented by the application (see appendix 5). The pupils must choose characters and surroundings for the movie first, after which they can start adding additional props to the story: vehicles, animals, background music, or even add more characters. Still, the preparations for the movie are made first and when everything is set, the user presses *record* to make the movie. The main idea of the application lies in the interactive nature of it: the objects on the screen are moved by pressing the screen, and the object are made to talk by the user talking him/herself at the same time when moving the characters, when the mouths of the characters move simultaneously. Also, the objects can be moved in both vertical and horizontal directions: moving them in vertical changes the size of the object and in horizontal the screen continues as the object is moved away from the starting point. When the user: the pupil, is finished with recording the movie, he/she presses *stop* and the file can be named and saved. (See appendix 5)

All the three focus pairs created a movie during the lesson but none of them reached the level of their language skills or what the application has to offer or what could have been achieved with a minute or two more of planning, or planning at all. Again five of the six

focus pupils were present in the lesson and this time missing was I1, and I2 was instructed to work alone. The PPG's effort in the task was the lowest of all the pairs as there was no logic in their use of the device or the application at any point. G1 and G2 did not work efficiently together and it was seen in the result, a funny movie which they were also somewhat shamed to watch in the interview situation. The boys had a lot of ideas at the beginning of the lesson and they followed the instructions, and even asked about some advanced features of the application, which we were not using in the lesson, but they did not succeed as well as they could have in the task. The boys were the ones who criticised the task in the interview and explained that it was difficult to do it in English and a more *prepared* or *ready task* would have been better. I agree about the nature of the task and it should have been more instructed: there should have been a ready text they could read or a task in which they would only fill in the gaps, for the pupils to achieve the settled task aim. Hence, the criticism of this lesson went completely to the task, not the application. Also, the limited time was accepted fairly easily but more time was naturally wished for in the future. In comparison to the previous lesson's application the *Dragon Dictation* (Nuance 2014), this lesson's criticism was the opposite: the pronunciation activity with *Dragon Dictation* was understood but the application itself was questioned, and in this case, the *Puppet Pals 2*-application was left critique-free and the structure and idea of the task were reflected on.

The intermediate pair PPI had only one representative attending the lesson and therefore the quality and quantity of pair work cannot be discussed. Nevertheless, the effort of I2 was rather good and a lot of independent problem-solving was witnessed during the lesson. She, for example had a sound of a tractor stuck on repeat at one point in her movie but somehow resolved it herself and created a movie without the constant additional sound. I2 task's outcome, the movie, still was not the most fluent of all the pairs' movies but it did consists of the most English language than the others. I2 also received some extra instructions as she was working alone and was given the permission to choose two characters for the movie, in order to create dialogues in the movie, instead of one character as the others had been instructed. Furthermore, at the end of the lesson, I2 had learned how to save the movie and also to make sure the movie had been saved in the right place, which she checked as a final act in the lesson. All in all, I2 use of the application was determined and self-driven.

The PPW worked unevenly in the lesson. They shared the device rather well but used their time in irrelevant matters as in choosing the characters or settings, but not really in making an effort to complete the task. I reckon the boys were nervous and could not even first address the issue that they would have speak English soon, without any further guidelines. The difference of PPW and, for instance the PPG, still was that the PPW did plan at the end the plot for their movie, even though it was short, whereas the PPG did not concentrate to the dialogue or plot of their movie at any given time. The PPW acted as they did perhaps because the boys again recognised they should plan what to say in the movie because otherwise they would not say anything. It seemed to work well between W1 and W2 to talk about everything they were doing together. The case of PPG the co-operation was the opposite: they made decisions on the way without any preliminary thoughts.

Also, after saving their movies and watching them, the PPW had stronger reactions than the PPG. Even though they both expressed their emotions with laughter, the PPW was more tense and careful every time before hearing their own voice. Their facial expression were very serious, as in they were nervous, and then relaxed into laughter when hearing their own voice. The laughter might be the safest way to handle the situation, instead of for example moping or showing disappointment in their language skills. The PPG, then again, did not show any strong emotions except slight amusement when watching the recordings, perhaps, as a result of their overall confidence in their language skill, which could not be affected by the result of a singular task. Moreover, the PPW hid their work station carefully and wanted clearly to work in peace.

The pupils' excitement and involvement could be seen as they asked specific questions about the applications features. Some of them inquiries were based evidently on the familiarity of the application and others on pure interest on the functions of the applications. These questions were for example: *can the pupils create their own characters from their own photos*¸ which is possible but due to limited time was not used in the lesson, and *that could the stories take place in different places instead of one*¸ which then again is not possible: in the limits of the applications functions one story can take place in one set of surroundings. The location is the first thing the pupils choose when the application opens up (see picture 8).

Picture 8: A print screen picture of a selection screen of the application *Puppet Pals 2*.


I reckon this application is the most stimulating application of all the three presented ones. The overall user interface is more child-friendly than for example in the spelling application *Dragon Dictation* (Nuance 2014). *Puppet Pals 2* (Polishedplay 2012) possesses multiple features applicable for educational purposes and the possibilities of the learning aims with this application are good. It can be used individually or in pairs or groups. It has the element of interactivity and the potential to increase creativity in pupils. *Dragon Dictation*, on the contrary, has to be more examined and then applied in to learning processes since it is not originally designed as an educational application nor to be used with young learners. The *Dragon Dictation* has the potential to be used in schools, with young learners as well as the user-interface is simply and the features of the application are simple, but the ways of using it must be discovered. The next section moves on to discuss how did the pupils use the iPads in the lesson and at the end summarizes the main topics relating to the third lesson.

### 6.3.3 The level of involvement created by the iPads

The involvement with the iPads was high in the third lesson and the iPads were the centre of the attention by the majority of the pupils. Nonetheless, as the task was done in pairs, usually one of the two pupils got less time with the iPad and his/her focus was more easily distracted. On the other hand, especially the pupil handling the device did not lose his/her

focus easily from the device. This kind of gap between the users could been seen in the lesson and clearly on one of the focus pairs as well, the PPG. Usually the indicator of this kind of off-balance was the silent but uneasy behaviour of the more passive pupil, whereas the more active user was quiet but then again similarly focused.

The aforementioned gap between the pupils could be observed the most clearly between G1 and G2 of all the three focus pairs' pupils. Their collaboration initiated fluently and they were both excited to use the iPad but then after a while when G1 kept handling the device himself and did not pass it on to G2, G2's attention span run out and he got distracted. G2 tried to keep his focus on the task and be involved in the decisions they were making about characters and others, and cheer himself up. However, at one point after a quite long time of silence between the pupils, G2 took the device from G1 on the basis that *it was his turn.* Clearly G1 understood the situation and was willing to the change in shifts. However, G2's turn ended up being comparatively short as it did not took much time before G1 was operating the device again. G1, in my opinion, showed quite an admirable amount of patience in the lesson when he barely got to touch the device. Hence, G1 was more focused throughout the lesson as he was the more active user of the device and G2 tried to be keen as well but after too much time kept no longer trying. Furthermore, even though G1 was the one mostly operating the device, he tried at the beginning of the lesson to keep G2 interested as well by asking questions and by trying to draw the G2's attention to what G1 was doing and how *funny* or *cool* something was. Thus, G1 made an effort as well but at the end their co-operation in this lesson was not as effective as it could have been. Unfortunately their production reflected well on their lesson effort, which was a movie with few words in English and a lot of illogical movement of the characters. Although, both of the boys shared their opinions about the task's poor outcome and its stumbling blocks and admitted in the interview that they were not happy about their movie.

Moreover, the PPG differed from the other pairs in a way that the pupil who was using the device, mainly made all the decisions as well and the other pupil could only suggest what should be done. Whereas PPW worked supportively together by making mutual decisions. Nonetheless, I2 was the only pupil present in the lesson of the PPI and she worked well with the device. Her usage was independent and her problem-solving skills were used as well when something was not working as it should have been. Also, there could have not been any power struggle over the device as she used it alone. All in all, she focused well in the lesson and besides produced the movie with the most amount of

English used. I2's working was intensive and she was quicker to move on to recording the movies that the other two pairs, perhaps because she could make the decision herself. The features of the original design's purpose of the iPad were seen in this scenario as it was used individually, instead of in pairs. The most distinguishing difference was the handling of the device was simpler as it needed not to be negotiated. Other issues of personal versus group use usually have to do with this kind of group dynamics or then, as the devices are used commonly in the school, with storage problems. Nevertheless, I2's behaviour and task outcome indicate in some level that independent working was more successful in this particular lesson. However, that result cannot be generalized as all of the movies made by the group were not included in the data and the I2's movie was therefore compared to the results of PPW and PPG. Anyhow, I2's movie was the longest, simplest and English was spoken the most in the film, of the focus pupils' movies.

The PPW, then again, was the most focused and co-operative pair of the focus pairs in the lesson. Even though only one of the boys was using the iPad at a time, their turn switching worked as well. Both of them were eager to use the device and therefore, one pupil used it for a short time before handing it over to the other pupil. The PPW still had difficulties in actually focusing on the task over the device. Albeit working well together, they also made no number of themselves during the lesson and wanted to work, again, hidden, as knowing that they were not evolving in the task performing well enough but wanted to keep having fun. The funniest part of the lesson for the boys seemed to be making the decisions about their story and then after a short recording, watching the movie over and over again. The PPW laughed a lot at the end of the lesson as they were listening and watching their movie repeatedly, which has been a distinguishing element of their pair work throughout the data collection lessons.

The movie task was purely a creative task, which purpose was to have the pupils speaking a lot of English. However, the task did not work well with its instructions and the outcome was the pupils ended up playing with the application and making movies with just few words or utterances of English. Still, considering the task with its original idea and aim, regardless of the outcomes, it can be said that ICT played a major role in the third lesson's course. As the task required creativity from the pupils and it had a specific product as an aim, ICT worked as **a construction tool** in the lesson (Lim and Tay 2003). This was the case in the first lesson as well when the pupils filmed a video with *iMovie* (Apple 2014b). However, what is more, the difference between these two lessons is the nature of the application: *Puppet Pals 2* enables pupils to make multiple, independent decisions and

alter the outcome of the task as the task is completed interactively, whereas in *iMovie* the pupils are editing data which has been created earlier to the editing and therefore the application is not interactive in a real-time aspect. Therefore, as the pupils' actions had straightforward effect on their task outcome, ICT was working as **a situation tool** as well. The main feature of ICT as a situating tool is the freedom the make choices and the possibility of experiencing happenings (Lim and Tay 2003).

All in all, as the results of the task were mostly poor in comparison to what was expected, one must admit it had somewhat to do with the task and its instruction. Perhaps as the assignment was bad, the pupils had difficulties knowing which issues to focus on: the story, the application or the use of English, and therefore, the outcome was according to it: not a coherent piece. Hence, the importance of more framework for the tasks can again be emphasized. Also, this task might be the one which would have shown the easiest, the differences in the quality of the products if altering the situation. In other words, the movies most probably would have actually indicated the level of the language skills of the group if the task would have been better: more framed. Taking everything into account, the pupils were active during this lesson and the atmosphere had a good mood the whole time, despite the poor results and the pupils' disclosures of the task's difficultness afterwards in the interview, which will the topic of the section 6.5. Nonetheless, the next section deals with the data of all the three lessons and examines the issue of English oral communication during them.

## *6.4 The role of oral communication in the lessons*

The approach of practising and learning English oral communication was behind each task performed in the data collection lessons. The role and amount of English varied in each lesson and as a common factor one can conclude that it was because of the nature of task performed. However, English was used in every lesson but it also had to be included in the instructions and the purpose of using it reminded during the lessons. This chapters covers everything relevant in the data about the role of the iPads and ICT that includes an oral communication angle, and all of the lessons are discussed in separate sections.

### 6.4.1 The iMovie and evaluation of the investment of ICT in the task

The first task of filming each other by using the *iMovie*- application (Apple 2014b) and completing an A-B conversation activity, had the main idea of producing a lot of spoken English and exploring would or how would the use of the iPad affect the activities. There was enthusiasm in the air, which took time from the instructing moment: both in the

beginning of using the devices and similarly at the end of the lesson were homework and instructions about how to leave the iPads were given. Hence, as discussed in the section 6.1, the course of the lesson did not follow the planned structure for the lesson and time was the biggest resource lost. The pupils' motivation derived mostly from using the new device, iPad, and the task could have been anything and the lesson would have followed its course anyway. The learning aims were too high for the lesson and the task, or on the other hand, lacked a specific enough purpose. Then again, as the mood in the lesson shifted from anticipation to joy, as the pupils received the iPads, the focus did shift slightly towards the task as well. The instructions were repeated several times but finally all the pupils got to work and everyone was able to film a movie during the given time.

The amount of English varied between pairs but mostly English was used only and in according to the conversation activity's questions and answers. The PPG did the task quickly and relatively fluently. However, they did not use any additional English and after repeating the task by switching the roles in the activity focused on watching the film and playing with the iPad. The PPI were not as fluent as the PPG but additionally focused more on using English. G1 commented at one point that *I'm supposed to answer you in English*, to which G2 agreed after admitting of kind of forgetting the language aspect. Thus, girls did focus on the task performance and I think this dialogue would have not been discussed unless there had not been a video recorder recording their performance. In other words, even though it is aforementioned that the iPad disrupted the girls' task-performance in some level, it also draw their attention the instructions and purpose of the task from time to time also. Then again, the PPW had the most effort in their task performing but the amount English guided in the task was the only they used and did not phrase any other English words or sentences as in the papers. However, some spontaneous use of English also derived during the lesson as I heard one pair saying *ACTION!* every time before pressing the record button. This spontaneous utterance of another male pupil indicates context recognition and confidence in one self's language skills in the moment.

Also, as a common feature all the pupils were willing to hearing and seeing themselves in the video. The task was done quite quickly and as much time as possible was used listening and watching themselves, which was evidently fun. What the pupils were watching on those clips one cannot know but I suspect that there were no major focus points but hearing one's own voice from an external source was peculiar enough. Mostly the pupils started laughing when they heard themselves and most of the couples had the time to repeat the task and watch the other recording as well. The technological side to

the task was brought by the mere existence of the iPad in the task performance. The learning aims were to introduce the device to some extent more to the pupils but also to use a specific application, *iMovie*. The use of the iPad in this task included a viewpoint, which is involved in the other tasks in the following lessons as well, of doing something that has not been possible before: to emphasize a feature in learning that is enabled today by mobile technology. This first task, its possible outcomes and the amount of English used could be speculated even more from the point of view of comparing the task completed with or without the iPad. In general the amount that English was used in the lesson most probable would have not changed majorly according to whether the iPads were involved or not. The pupils may have gotten more repetition of the phrases if the task would have been executed as a usual conversation task in pairs but then again, they would have lacked the authentic feedback received when watching the videos. Although, the task could have been of any sort and the lesson would have also gone through the same stages as it did now. There were feelings of expectation and excitement of using the iPads, affecting the attention span of the pupils, which was more of an influence to the lesson's course more than the nature of the task. The next section discusses the second lesson's task, which is different in nature compared to the first lesson's entity.

### 6.4.2 The Dragon Dictation and self-driven effort in pronunciation

In the second lesson the pupils worked individually and the amount of English was less than in the previous lesson. The pupils were pronouncing words with an application *Dragon Dictation* (Nuance 2014), and therefore as singular words and phrases were practised, compared to the previous lesson's conversation task, English was used less. However, even though any complex English was not heard during the lesson, a lot of repetition was involved. More success by the pupils would have been nicer to see and hear but with the situation's stumbling blocks of different issues arose and affected the learning situation.

The difference between working with the iPad alone or in pairs was the most significant issue when comparing to the previous lesson. As the pupils all had their own device, there was no domination over the device or inequality in performance between pupils but every pupil could decide their effort in task performance themselves. Also, the difficulties and achievements were shared with peers in this lesson, opposed to the previous lesson where the working was completed mostly hidden from everyone else in pairs and problems were solved in pairs. Moreover, the task was better in this lesson and the failures were due to

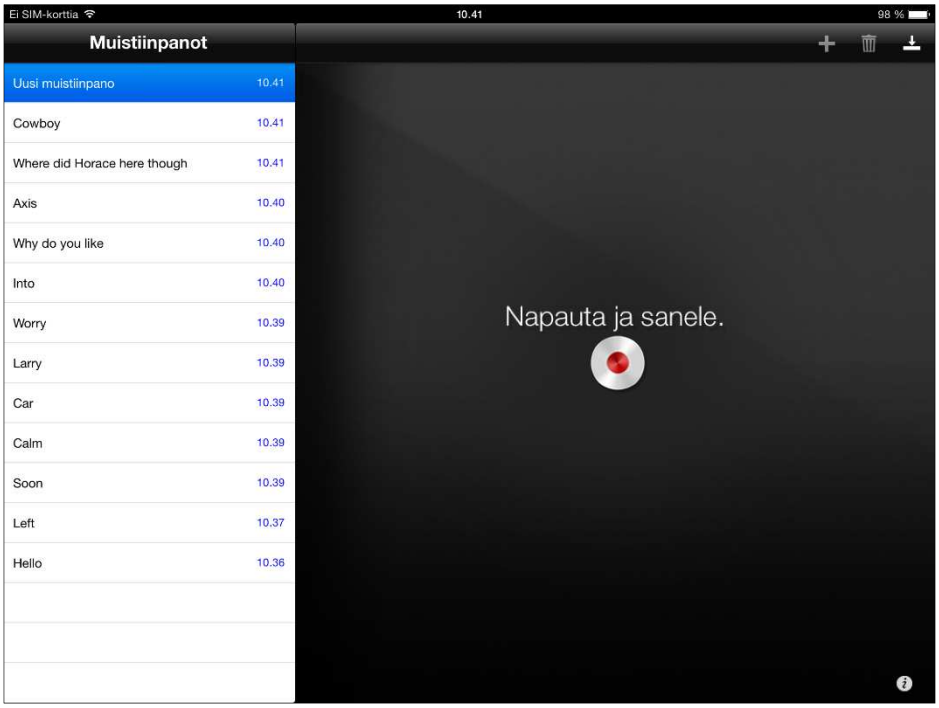
the application use, which affected in this case negatively as the amount of the language use could have been greater without the device included in the task. On the other hand, this kind of activity is an example of a task that the iPads enable: immediate feedback on pupils' pronunciation, which has not been possible this simply before. Therefore, the comparison of the task with and without the device is unnecessary. The activity is an indicator which direction oral communication tasks can go and what can be done, which involve changes in the number of pupils performing a task: working alone or together, and the existence of corrective feedback from someone else than the teacher or a peer.

There is no relevancy of discussing the task's nature without the iPad as it would lose it whole concept but instead, the nature of task performance can be examined in more detail. G2's confidence was noticeable in the lesson, despite his struggles of using the application, because he tried to pronounce longer utterances and sentences as well, instead of repeating only singular words. G2 was speaking throughout the lesson but his output was mostly in Finnish since he spent quite a lot of time wondering out loud the usage of the application. However, G2' language switch was fluent and he focused on the pronunciation of the words when using the application. Despite his efforts, G2 did perform as well as he could have and wished for in the task.

The I1 and I2, on the other hand, were not as confident in their task performance but concentrated more in their doings and were not talking much during the lesson. Both I1 and I2 hesitated a lot in the task but were also interested in the app's functions and did not straightforwardly criticize the application if they did not succeed in pronouncing. They showed expressions of dissatisfaction and disappointment if they were not successful but still continued practising. However, I2 had a great effort in the task as she did not settle pronouncing singular words either, despite the correctness of them, and tried pronouncing longer sentences also (Picture 9).

Both, W1 and W2, established a great deal of repetition of the chapter's lexicon during the lesson and utilized the learning opportunity thoroughly, which can be seen as a sign of the acknowledgment of their weaker language skills and the will to better them. Nonetheless, practising pronunciation was not fluent on them constantly and the operating was rather tentative at times. Hence, it can be concluded that the iPads both enabled independent learning situation, in which each pupil could set the terms of their involvement and effort, but also included the risk of having the device as a distraction, instead of motivator, in the lesson.

Picture 9: A print screen image of I2's iPad-screen of *Dragon Dictation* at the end of the second lesson.




### 6.4.3 The Puppet Pals 2 and feature of interactivity

The third task was the only task the pupils were supposed to come up with the language used in the task themselves. The pupils were to create a movie by using an application *Puppet Pals 2* (Polishedplay 2012) and the results were not appraisable. The amount of English used in this lesson was the highest compared to the two previous ones. Yet, as discussed earlier in the section 6.3, the nature of the spoken language was not appraisable and was mostly consisted of grunts and hisses. Although, in the middle of the lesson when one pair were preparing to record they movie, presumably including dancing, one of the pupils sang the lyrics of a pop song: *I´ve got the moves like Jagger*, which again showed that the context of an English lesson was recognised and the theme of the movie was clear. Then again, I did not see this pair's movie and cannot evaluate it more.

However, the effort and results of the three focus pairs can be examined. All the three pairs conducted the task but with different agendas. The PPG was clearly keen on using the application and forming their story, but the red line was lost in the actual process of recording the movie. The boys did not plan what to say after they press record and the outcome was according that: moving around the characters pointlessly and making different sound as they went along: *plöpöllööööpöö*, *murrurruuruu*, *aaaaaa*. Some coherent utterances were also part of the movie but they were similarly illogical and not-

coherent with anything in the story: *you're ugly, "oh no* and *"I hate you*. The PPG spoke a couple of preface sentences in their movie and the rest of the time they moved the characters and made different sounds with their mouths. The PPG's movie lacked a plot and dialogues, and the only factor they succeed in was the use of the application. Nonetheless, the PPG's language skill would have been sufficient enough but, as it was discussed in the interview, the task would have needed more framework for the pupils to succeed. Although, some pairs in the group managed to create a coherent movie with English dialogues and therefore, the PPG's recommendation cannot be generalized but merely stated that this working method was not suitable for the PPG.

The PPI's only participant, I2 had a different user experience of the application as she worked alone. She spent quite a lot of time making the preparation choices of characters and other elements and also had some technical difficulties but her thoughts and ideas cannot be discussed as she was not working with a pair, and therefore, her performing was independent and quiet. Furthermore, I2 included the most English in her movie, even though the dialogues were fairly incoherent. She also had short sentences and a lot of repetition of utterances but they did form a story of some sort: *hello – hello – how are you? – Oh I'm fine.* and so forth. In addition to the main plot of the Ballerina &Santa Claus- movie, I2 made different sound effects as well as the PPG, and sound effects in these cases can be seen as sounds filling the otherwise silent movie.

The PPW, on the other hand, planned their movie and did not spend much time choosing the characters or the surroundings. They did take their time getting to know the application after they had chosen all the required elements and were ready to record but they also stopped to think about what they would say and do in the movie with their characters. Their movie was short but it had a plot and a planned dialogue. The amount of English is essentially equal to the PPG's movie but the process behind it is different: the PPG uttered the sentences while recording and the PPW planned the sentences ahead of recording. Also, the lack of confidence in their language skills might have been the reason for this that they actually had to focus on the task to get something done and show for themselves. However, they clearly were disappointed to their result, even though it made them laugh every time they watched it, as they would not let anyone come and see it closer and told a peer not to watch when they were watching it themselves. Moreover, the sentences in the movie were pronounced rather quickly and silently: *What are you doing? – This is a robbery* and so forth. The boys only spoke few sentences and their movie was the shortest but nevertheless, their effort in the task was the most noticeable.

All of the pairs were allowed to film as many movies as they had time and all the three focus pairs had time to record at least two movies. Still, only one was chosen to be saved after the task and included in the study data. It would have been interesting to be able to compare the movies but the only aspect I know is that all three pairs chose the last movie they made to be saved. Possibly the task would have been better with only a minor adjustment of mentioning that the pupils could write down the dialogues first or guiding how to plan a movie. Though, these instructions did not come to mind when planning the task. All in all, despite the simple outcomes of the task, the pupils used the application with enthusiasm and it guided the pupils' language skills use to the right direction: all the pupils realized the relationship between their finger-gestures on the screen and the movements they created in the characters. Also, it was not questioned by any of the pupils that the sounds made by the pupils resulted in moving of the characters mouths in the application. The pupils used the application fluently and with more accurate instructions the amount of English use could easily increase and the movies would be of better quality. Moreover, the feature of interactivity was adopted immediately by the pupils and created the correct ways of working and learning in the learning environment: the pupils were co-operating with each other, using English as the language in the movies (though quite poorly), got involved with the application and interested by the use of the iPad. All things considered, the framework of the language lesson was appropriate, whilst the content could have been finer and more skilful.

## *6.5 The group interview: pupils' views and opinions*

The interview was conducted a week after the last recorded English lesson but the recorded footage was used as an aid to help the pupils remember those lessons and the tasks and atmosphere during them. As it came to my knowledge during the data collection, this group had not used the iPads that frequently yet at the point of my study, and therefore, the pupils were acquainted with the device already only because most of them had an iPad or some other Apple i-device at home. Therefore, the data collected from the interview did not meet the expected results as one presumption was that the pupils would have had more experiences of using the device in educational surroundings. Anyhow, as mentioned above, all of the focus group's pupils were already familiar with the device and therefore were able to discuss about the topic with relevant data, in contrast to pupils who would have not used an iPad before the few lessons in school.

The viewpoints occurring in the interview were about the pupils themselves and the role of the teacher. Mostly the discussion evolved around the use of iPads and the only references to other aspects of ICT were made to compare the iPad to, for example other devices used in the school. The findings of the interview data will be examined according to the same guidelines, controlled by the research question, as in the previous sections in this chapter, and are not following the order of the interview questions (see appendix 1). The first section covers comments made about the use of iPads in the lessons as a whole and about the relationship between ICT and the teacher. The second section deals with the pupils' opinions about the three applications used in the recorded lessons. The third part, then again, focuses on the device itself and the pupils' views about it, and finally the fourth section discusses every other relevant point made by the pupils. The last section of the chapter, 6.6 deals with the overall role of MALL in all of the recorded lessons.

### 6.5.1 The relationships between the pupils and the iPad

The pupils' own participation and learning in the lessons were mostly discussed through the feelings and reactions the pupils experienced when they use iPads in lessons, and one occurring topic was the issue of using iPad as recording device. It was a consensus that it is not difficult to see or hear themselves if they get to see and hear the recording first themselves, and the best would be to have the choice of not showing it to others if not wanting to. Additionally, one of the pupils admitted that it actually might be rather *weird* to hear one's own voice, especially when others are listening as well. However, sharing the results or productions with the rest of the class was considered to be nice and fun, but only when everyone is not obligated to show their work but they can do it willingly.

During watching the video clips of the recorded lessons and the movies the pupils made in the lessons recorded, the pupils reactions were the same as they discussed in the interview a few minutes earlier. The pupils whose movie was being watched or faces seen in the video, kind of hid in the moment: the pupil or pupils hid their faces with their palms or lifted their knees to their lap and put their arms around them, which I presume is an act of self-protection. The reactions still did not include anything negative and even though some kind of self-protection gestures or movements were made, the body language and gestures also included laughter and excitement. I also asked every time before showing a clip that would the pupils like to watch the videos and also told which clips would be relevant to watch at that point and why.

The role of the teacher came up when discussing this topic of the general role of ICT/iPads in the classroom and all the pupils agreed that it does matter in teaching and learning whether the teacher his/herself is excited about ICT or not (example 1). Pupils talked about the issue that it is a disadvantage for the pupils if the teacher does not know how to use a device, in this case the iPad, and they felt that it was then the pupils' responsibility to teach the teacher to use it, which would take time away from using the devices themselves. Moreover, it could affect the nature of tasks and purpose of the use if the teacher would be unskilled in using the device because it would affect the quality of instructions as well. Also, pupils guessed that a more excited teacher would also use the devices more than a one who is not that interested in them.

(1) Interviewer: Kuinka se vaikuttaa jos opettaja on tai ei ole itse innostunut laitteista/käytöstä?

How does it affect if the teacher his/herself would be/not be interested in ICT or using iPads her/himself?

Pupils: (kaikki myötäilee) Kyllä se vaikuttaa joo.

(all agreeing) It does affect, yeah.

G2: Ettei sille sitte tarvii kertoo kaikkia. Että jos se vaikka antaa vaan ne iPadit silleen ja ei sano mitään niin ei se oo hirveen *hyvä/kiva*.

That you do not then have to tell her/him everything. For example that if he/she would hand out the iPads and like not say anything, then it is not that good

G1: Ja jos se ope ei oo innostunut niistä niin niitä varmaan vähempi käytetäänki.

And if the teacher is not interested/excited about them, they probably would be used less

### 6.5.2 The applications used in the lessons

As a background information I asked at the beginning of the interview that how have the pupils used iPads in any subject's lessons in school and, as it was mentioned at the beginning of this chapter, the use of iPads in education was new to these pupils. They had used them a couple of times in their own home class in different lessons but mostly the experience of the use derived from home usage. The pupils had had an introductory lesson to the device where they had the freedom to choose what to do with the devices and the most of them had surfed on the Internet watching YouTube-videos. In addition to that lesson, they had had already a project with the iPads: filming videos, and also lessons of using the application Puppet Pals, which is one of the application in the present study's data as well.

The comments and discussion about the applications used in the lessons were mostly positive and the actual functions or core ideas of the applications were not criticized but merely the situations when or the ways they were used. Only two applications of the three, *Dragon Dictation* and *Puppet Pals 2*, were dealt with in the interview situation. I reckon the discussion were only about these two is because the third application's, *iMovie*, features were not that broadly used that it would have felt like using an application than an integrated feature of the iPad. The pupils filmed each other by using the application, which could have been done through the device's camera feature but as the task had follow-up plans which involved the use of the *iMovie*'s features, the realization was completed with the application. Nevertheless, the task with *Dragon Dictation* was to pronounce English words out loud and the application showed them in a written form, from which the pupils could see whether the word was correctly pronounced or not. The Puppet Pals- task was to create a movie by using the application: choose characters and settings, and produce a story with a plot and speak the dialogues in English.

The *Dragon Dictation*-task was done by everyone having their own device and Puppet Pals-activity in pairs with one device. The pupils all liked *Puppet Pals 2* better than *Dragon Dictation* and the arguments all related to the difficulty of working alone with the device in the same classroom as there was too much noise in the space. Also, the feelings of frustration arose when using the application were discussed and the pupils felt that they did not succeed that well in the task (example 2). The pupils must have been aware of the noise during the lesson already but mostly reacted to it by showing the signs of frustration because no-one commented on it. In the interview the pupils agreed that it would have been easier to practice the pronunciation in a more quiet learning space but still said that having many pupils in the same space would be acceptable, merely not as many pupils as they were in the lesson. This insight might the results of that the pupils find it problematic to concentrate if there is too much noise around them and would like to observe what others are doing and therefore lose the focus of their own performance. Although, this activity with the *Dragon Dictation* indicated that these kinds of settings are not ideal for at least an individual task performance, and therefore the pupils are correct on criticizing the circumstances of the task. However, the same accusations of the erroneous functions of the applications or the device were not discussed in the interview, which can imply that the emotions were a greater effect on the failures in the task in the lesson than the application.

(2) Interviewer: Mitä mieltä olitte siitä Dragon Dictationista? Oliko eka kerta kun käytitte?

What did you think about Dragon Dictation? Was it the first time that you used it?

G2: Kerran aikaisemminkin ollaan kokeiltu. Mutta se on aika hankala kun se tunnistaa silleen huonosti, kun on niin paljon ääniä siellä. Pitäis kaikkien melkein olla eri huoneissa.

We have tried it once before. But it is pretty difficult when it recognizes (words, voice) badly, when there is so much noises there. Rather everyone should be in separate rooms.

Interviewer: Miten se ois voinu olla parempi tehtävä?

How could it have been a better task?

G1: Pienemmissä ryhmissä, eri huoneissa

Done in smaller groups, in different rooms

G2: Se ottais vähä niinku helpommin sitä ääntä

It would like take the voices/noise easier

However, even though *Puppet Pals 2* was preferred over *Dragon Dictation*, the movie-task was also criticized. The pupils had to decide at home which character to use and everything else was decided during the lesson and the criticism was about the intricacy of the task, more specific that it was hard to come up with a story in English without any help (example 3). An activity with more framework would have been more pleasant. All of the focus groups' pupils created a short movie with meagre use of English and it could be observed in the interview that the pupils were not satisfied with the quality of the movies either. They commented that the application is fun to use because one can choose everything that is happening there and it is funny that one's own voice is used as the voice of the characters in the movie. Still, the focus of the learning aim was lost almost immediately by the focus pupils in the lesson and they had too many issues to make decisions on and therefore, I reckon the task failed. The pupils were somewhat overwhelmed and there was no time to do the task properly and thus one of the main learning aims suffered in the process: the role and amount of English language was forgotten, whereas the features of the application were utilized well.

Nonetheless, the fluent operating of the application and the device's touchscreen technology was appealing to observe and it implies that user-interface of the iPad and the basic idea behind the Puppet Pals – application is familiarized to the pupils. Moreover, as

W2 and G2 were able to pin-point the angle of the English language in the task performance, it shows that the pupils acknowledged the main issue completed unskilfully in the task. Thus, with a more framework for the task, as the pupils also wished for, the movies would have had more English spoken in them and perhaps with better language skills as well.

(3) Interviewer: No kertokaa tehtävästä, oliko hyvä, oliko millanen tehä?

Well, tell me about the task, was it good, how was it to do?

G2: Ei siinä keksiny oikee hirveen nopeesti.. Ei siinä oikein kerinny hirveesti tehä

One did not come up with anything so quickly there.. One really couldn't achieve much there..

W2: Se oli ehkä vähän vaikee tehä englanniksi

It was maybe a bit hard to do it in English

Interviewer: Oisko ollu kivempi jos te olisitte lukenu jotain?

Would it have been nicer if you have read something?

G2: Joo, ei mitään tommosia improvisaatiojuttuja. Se on vähän hankala ku siihen tulee jotain kolme sanaa suunnilleen englantia.

Yes, nothing those kinds of improvisation stuff. It is a bit difficult when there comes something like three words of English.

### 6.5.3 The tablet computer iPad

The third angle that could be examined in the interview data as well is the novelty and appeal of the device itself. The pupils compared the iPads to laptop and preferred the use of the tablet versions of computer over the laptops. They mentioned that there was always too few computers for the whole groups' use and therefore, they always worked in pairs or groups with laptops. However, the pupils could not come up with anything they had done with laptops in the past, besides writing stories and *nothing much* and thus, the nature of the activities done in the past cannot be discussed any further. On the other hand, this result can be part of **the novelty effect** (Henderson and Yeow 2012), dealt with in section 4.4., and pupils find iPads so appealing that any older device is left in the shadows, even though it would have been appealing in its time. In any case, the best thing about the iPads was said to be that a lesson with iPads is always somehow special (example 4).

(4) G2: Sillä ei tehä normijuttuja

We don’t do regular things with it

W2: Sillä saa tehä silleen aika vapaasti

You get to work with it quite freely

The pupils also had plenty of ideas of what kind of activities they would like to do with iPads in school in the future, and also were able to think about it from the English lessons’ point of view. The pupils listed that it would be nice to work in groups, film a movie, speak English, and do tasks relating to texts chapters’ topics. Moreover, working in groups could be done in boy and girl groups as it would encourage working together, instead of in mixed groups. This concern however, I believe to be about somewhat of having friends in the group to work with and thus, find it more fun. Yet, the topic created discussion so there could be a deeper point to the issue but it was not brought up in the interview (see example 5). Other features of the iPad were discussed as well: the functions of sharing and mobility, which are seen as strengths of the device (Henderson and Yeow 2012). The pupils realized the possibility of working in separates spaces and moving around the device easily in the school. Also, sharing was not seen as an issue but covering their backs first was more important: they wanted to be able to watch their productions first before revealing them to others.

(5) G2: Ja että silleen ryhmissä ihan. Ja silleen hyvä, että poikaryhmissä ja tyttöryhmissä, koska se on vähän, että ei siinä sillon uskalla puhua. Tai niin paljon ku siinä poikaryhmässä.

And in a way that working in groups. And it would be could like in boy groups and girl groups because it is kind of that you don’t then have the nerve to speak. Or not as much as in a boy group.

G1: Niin. Tulee eri asioita esille

Yeah. Different things could rise up

One pupil said that the best activity what could be done with iPads would be to record their own movie and then show it the rest of the class. I reckon that this willingness comes from the freedom within the activity: pupils could affect to the filmed production and it would not be so restricted activity as some classroom activities can be considered to be. Also, the nature of the wishes of activities by the pupils included several aspects that has been studied to be the reasons why mobile technology or ICT in general ought to be utilized in schooling. The task types mentioned by the pupils would include for instance playing games, the possibility to be creative, being able to make their own choices which

affect the outcome of the task, and to search, organize and present information in different forms. These angles are the main features of the ICT tool categories by Lim and Tay (2003), which are examined in chapter 4.3, and emphasize well why applying ICT in education can be beneficial for learners and learning outcomes. Hence, these pupils have also realized the advantages of utilizing the iPads and issues it enables, which was, in addition to the discussion in the interview, seen in the lesson in the behaviour of the pupils as they mobile, co-operative and interactive with the *tablets* in the classroom. On the whole, the pupils commented that everything they have done with iPads so far has actually been nice and nothing really boring with the devices has not been conducted (example 6).

(6) Interviewer: Seuraava kysymys ois ollu oppiaineiden välillä vertailu, mutta kun sitä ei oo ollu niin ei sitä voi oikein vertailla. Mutta kertokaan, tai voitte jutella vaikka keskenänne, jostain tehtävästä minkä ootte tehny tunnilla. Ihan kaikkee mitä tulee iPadin käytöstä mieleen, koulussa. Onko ollu joku tehtävä tosi huono mitä ootte tehny?

The next question would have been to compare between different subjects but as there is nothing to compare, you cannot really compare it. But tell me or talk to each other's about an activity or task that you have done in class. Anything that comes to mind about using iPads in school. Has there been a task that has been really bad?

G2: Ei niitä kyllä mitään hirveen huonoja oo ollu

There has not been anything really bad

Pupils: (all agreeing)

G1: Kaikki on ollu semmosia semi .. (kivoja) ja parempia

Everything has been at least kind of.. (nice) and better than that

W2: Oikestaan kaikki mitä ollaan tehty iPadilla on ollu silleen hauskaa

Actually everything that we have done has been like fun

G2: Parasta on silleen että kuvataa joku esitys, ja sen voi näyttää luokalle ja että siihen on aikaa
silleen paljon

It is the best that we would film a movie and the you can show to the rest of the class and that there is, like, a lot of time to do it

More time to use the iPads and more iPads in the lessons were naturally wished for as well. Then again, no-one wished that the iPads would replace books completely and, for example, playing the games in the activity books was also argued for. The reasons behind

the wishes presumably are the enthusiasm to use the devices as much as possible, especially now that they are still new, and the pupils are keen to get familiarized with them. However, one cannot predict the future that will the pupils also begin to see disadvantages in using the iPads in the classroom. At least not many discouraging issues were not the topic of conversations in the interview, the exception being the difficulty of working independently in a learning space with too much noise. The other aspects which could be seen as discouraging topics, the pupils essentially considered as matters under or possible for development: working alone or in groups and irregular difficulties with the devices or applications. Also, surprisingly the pupils did not comment on the difficulty of working in pairs in more detail but then again, an individual interview would have been more suitable form for raising perhaps negatively-toned comments about the pupil one had been working with. Nevertheless, the pupils agreed that all forms of learning should be used: individual work, pair-work and group-work, although also hoped that the groups could of the same gender.

As a final topic that could be straightforwardly chose as an issue of analysis is the physical use of the device. I asked the pupils to tell me how they experience the use of the iPad, the hand and finger gestures, and that have they been instructed about the use of the device in school. The answers implied the use to be easy and quite a lot of discussion was created when one of the pupils mentioned the styluses available for the device, which some of the pupils liked to use and used at home and some of the did not. Nonetheless, this implicated that the knowledge of the iPad's use was more than they had learned in school surroundings. The instructions they have received at school had been about, for example how to carry the device correctly: with both hands, and to speak clearly and not shout when using the *Dragon Dictation*. Otherwise pupils do not see or experience the administrator side of the device use (Kainulainen et al. 2013) as they are usually provided with a device as ready to be operated: as one of the pupils commented that when finished working with an iPad, they give it to the person next to the trolley, who places the devices in the spots. Therefore, a broader, an extensive understanding of the device has not been gained, at least not in the first times using the device.

Also, some instructions to other pupils were issued: because the devices are in general use in the school and circle around the school from class to class, the pupils said that the device should therefore, be empty every time the device is passed on (example 7). Longer and bigger projects to be possible the pupils also talked about that it would be great if the devices stayed longer in the use of one class at a time. Although, due to the occasional

use of the iPads, the pupils do not see the multiplicity of possibilities how to save and share their ready or incomplete projects, and thus might not see that it is possible to work on project in a longer sequences than the ones the iPads physically exist in the groups' classroom. Anyhow, the guideline mentioned regarding the memory storage of the iPad can be considered as useful (example 7).

(7) G2: (Aiheena töiden tallentaminen) Eiku ollaan, mutta se on huono ku viime vuonnaki siellä oli hirveenä kuvia niissä iPadeissa, mun mielestä ne pitäs poistaa siitä. Tai siis ku ne lopettaa sen käytön

(Talking about saving) No wait, yes we have, but is not good because, for example, last year there was a lot of pictures (taken by the previous groups that used it) in the iPads and I think they should be erased from there. Meaning that when they are finished using it

All things considered, the pupils had valid and valuable views in the interview on the topic of ICT in school, and in the 30 minutes were able to discuss it from various angles. All in all, the views and opinion of the pupils were positive and overall negative feedback or comments were not made. The pupils see the use of the iPad as a phenomenon that has to be further developed. The pupils admitted their own failures in the lessons and activities but also were able to criticize the task types and instructions, and also suggest suggestions of improvement for future lessons. Hence, the input of the pupils can be considered useable and indicate that the viewpoint of pupils in general should be reckoned with when planning forthcoming lessons where ICT has a role in the learning environment and process. Lastly, the chapter 6 is concluded with a summarizing section, which firstly discusses the final aspect of the data analysis: the MALL approach, and then summarizes the findings of the data analysis as a whole.

## *6.6 The features of MALL in the recorded lessons and a summary of findings*

To conclude the data analysis chapter of the study, the features of MALL will be discussed in this section, following the overall summary of the findings in chapter 7. All of the MALL- features have been included in the sections earlier analysing the three recorded lessons' data but here the main points will be shortly listed and summarized. MALL emphasizes the importance of mobility, connectivity, sharing and context-sensitivity. MALL does not limit its characteristics to distance learning or face-to-face learning or specific learning situation but can be applied and adapted to any teaching and learning method (Conacher et al. 2004). Moreover, MALL should be used to guide the ways of teaching since it introduces aspects in education enabled by and with mobile technology.

The mobility feature was seen in each lesson in the teacher's group control, task instructing and pupils' behaviour. The teacher divided the pupils into two separate learning spaces in two of the three tasks, and therefore enabled a calmer working environment for both groups. Furthermore, the division created more context sensitive learning situations and enabled mobile, individual learning to take place (Lang et al. 2003, Henderson and Yeow 2012). The pupils also discussed the issue of classroom working atmosphere in the interview and mentioned that it is easier sometimes to work in different spaces because that is how they get to work more quietly and peacefully.

Furthermore, it was seen especially in the first two lessons that too much noise in the learning environment disrupts the learning process: in the first lesson all the pupils were in the same space and moved around the class watching what others were doing and showing what they themselves had filmed, and in the second lesson too much noise in the classroom interfered each pupil's independent pronunciation exercise. If the separation of pupils was not already included in the task instructions, the teacher walked around the class re-seating the pupils or they could do that themselves as well if they wanted to. Hence, the pupils were able to move around in the learning spaces and therefore, enhance their learning experience by finding a suitable place to conduct the task, which was enabled by the portable iPads. Moreover, the mobility of the devices was involved in the whole data collection as all the data was recorded with iPads, especially as a part of the data was gathered with recording the lessons with handheld iPads: me and the teacher moving around the classroom and hallway with the devices. All in all, the mobility was an element in the lessons directing the ways of working and learning as well as an element framing the method of collecting data.

The connectivity and sharing aspects (Traxler 2009) enabled by the iPads are not yet as fluent within this particular school as it could be. The devices are the latest device in the school and therefore, the supervisory aspect is covered by the teachers and mainly the teacher who is the administrator of the iPads in the school. Gradually the teachers should involve the pupils as well into the process of managing and operating the device more broadly: altering relevant setting when needed and learning different ways of saving the contents of the device. The teacher can move the movies or any products made the pupils into a cloud service, which is owned by the class or the teacher, and that way save and share them. However, I know that some teachers in this school have used a cloud service with pupils as well but it could be included in the present study's data. In other words, the core idea of sharing and saving lies already behind any classroom situations but the

prosecution still lies in the hands of the teacher as long as the pupils are not involved more. Moreover, since the aspect of the present study is the pupil's viewpoint, the processes of sharing done by the teacher after the lessons is not further discussed.

The simplest sharing pupils can do is to save documents on the device and show them to each other but that is merely a part of the connectivity MALL contains (Lang et al. 2003). Other ways of sharing, which the pupils will hopefully someday utilize, are to share the documents via e-mail, or save them on a cloud account or also save, for example, video files online straight from the iPad's camera roll. Hence, sharing the content of the device is possible but needs to be practiced. Also, all the applications do not share the same sharing ways but they vary and therefore, the sharing operation might not be that simple every time and alternative ways must discovered and tested. This is an issue I faced after recording the lessons: the video files were too big in size to be shared via a cloud account or e-mail and as the files were private study's data they could not have been saved online. Therefore, the solution I settled upon then was to edit the files into smaller files and then share and save them to a cloud service *Dropbox's* (Dropbox 2014) account. Furthermore, other, better solutions that what could have had been done with the files have been discussed after the data collection: one solution would have been installing Apple's program *iTunes* on a computer, connecting the iPad to it and then operated the iPad through the *iTunes*. All in all, the process of getting the files from the iPad was more problematic than expected but with alternative solutions made possible.

Context-sensitivity in the case of MALL and English lessons mainly deal with the nature of the learning environment. Context-sensitivity can mean that the boundaries of the learning space are not as clear anymore as has been used to so far, and learning situations can be placed more freely (Lang et al. 2003). Learning can happen anywhere and anytime as the iPads are not tied to a specific station, compared to for instance PCs in an IT classroom. The iPads have the same features no matter where used and the connections, as in the Internet or Bluetooth, are not lost if moved around in the school, due to wireless connection technology. Hence, iPad's use and context-sensitivity refer to realistic situations and the learning taking place not following the same course each time (compared to an IT lesson held in an IT classroom). All in all, with more context-sensitive learning other features of MALL and mobile-learning in general can be experienced: the learning experience can be situating and feel authentic as there are the potential to independent choices, discovery and creativity. To finish the study and summarize the findings in general, the main conclusions will be discussed in the last, concluding chapter.

# 7 DISCUSSION

In this chapter I will conclude the present study by first summarizing and discussing the main results of the study with references to previous research. The chapter is divided into two sections, first of which deals with issues relating to learning environments and the second one, then again, to learning situations taking place in the different learning spaces.

## *7.1 The learning environment*

Finland is aiming to a complete computerization of the matriculation examinations by the year 2020 (Digabi- ylioppilastutkinnon sähköistämisprojekti 2014, Edu.fi). This renewal would mean the entire process being executed with the application of IT: the students would complete the examinations with laptops or tablet computers as well as the assessment would be done utilizing IT. Hence, if one of the governmental aims is a renewal of that extend, the role of ICT in education should be re-examined in every educational level, from primary to higher education. The present study shows how ICT is a part and experienced in a primary level education, in the fifth grade English lessons.

One of the main findings of the study is that, the pupils appeal and apply to technology fluently, which can be the result of that, even though the learners are young at age, technology has always been a part of their lives. There is a difference to have been born in the 1990´s or in the new millennium, and the achievements and developments done in mobile technology, their influence to the society and the generational attitude towards them, are examples of it (Moody and Bobic 2011). Children born in the 1990's most likely cannot remember a life without the Internet and have been born to homes where the PC has already been present, whereas the millennial children might gain their first computer user-experience on using a tablet computer and not have a desktop PC at home at all. Nevertheless, today's primary school pupils are not young enough yet to go there lives without having to operate a desktop computer since the changes towards more ICT supported learning environments in the schools is still under revision and development. Thus, all these versions of the *computer* are still common and especially in the field of education, the level of equipment varies drastically between municipals and schools: some merely have an IT classroom with 20 PCs, whereas another school rotates a trolley of 120 iPads.

ICT has become such an essential part of life that the existence of equipment and connections are not questioned anymore but consumed with pleasure. This should be the case of integrating ICT into education as well. ICT can facilitate in multiple roles but its

presence can no longer be questioned or wondered. The school and classroom's technical infrastructure limits the possibilities of utilizing technology but one must recognise that whether it is the case of a teacher planning a lesson with a laptop at home or a pupil checking the English homework from the teacher's webpage after school, ICT is used then as well, as an aiding tool. Learning and teaching methods have gone through multiple phases in the course of history and today's phase clearly emphasizes the possible and eminent role of ICT. The schools latest electronic purchases include document cameras, IWBs and tablet computers. Utilizing these can make the learning situations interactive or independent according to the learning aim at hand. The behaviour of the pupils in the data collection lessons support this statement. The pupils worked mostly efficiently together when they were conducting a pair exercise but were also able to concentrate on self-driven task performance when using personal iPads. Despite the working method in the lessons, the interactive nature of co-operation was present in each lesson: the pupils shared their task outcomes with others and offered a great deal of peer support when needed.

The acknowledgment by the pupils about the changes in the learning environment enabled by mobile technology, as in iPads, was seen in the lessons as well. The pupils were comfortable in moving around the classroom or working outside the classroom when permitted, and used the iPads wherever they were placed or re-seated. This feature of mobility has not been similarly possible in the past as the devices used cannot necessarily be characterized as portable as iPads are. The pupils have always been able to move around the classroom and be interactive but the devices have not been a part of the learning environment and especially situation as a mobile feature but the learning has happened where the device has been located. However, laptops were considered as portable devices after desktop computers but today tablet computers offer generally more possibilities of mobility in learning and teaching: they aid in to creating more authentic and appealing learning situations.

Also, the suitability of the iPad for elementary education is significantly more appropriate, opposed to for instance laptops, as its design in shape and operating system have been studied and established to work well with children (Henderson and Yeow 2012). Arguably a laptop can be too complex for a young learner to operate without multiple introductory lessons. Nonetheless, the pupils were fluent operating the iPad and had no insecurities about handling it, neither on the move or at their seats. Hence, the level of pupils' interactivity and collaboration was great in the lessons as they could communicate with

peers naturally with moving around *with* the iPads. The teacher also commented that this phenomenon of the pupils aiding each other as much as they did in the lessons was a substantial increase compared to past and enhance in the learning environment and process.

Moreover, another finding of the present study is that the pupils possess valuable input about the role of ICT in learning and can also criticise the use of it. No matter what lesson or task being planned, technology should not be seen as a disadvantage to learning but see the advantages of it and try how it can be used normally as a part of lessons. This was the main viewpoint of the pupils' attitudes in the interview: the pupils discussed the role of ICT in a surprisingly constructive way and were able to criticize the role of it during the lessons but also offer ideas of improvement. ICT enables activities and ways of working that has not been possible before, as in working with different media tools and formats. Also, ICT is not supposed to take over everything happening in the learning environment but to be used alongside any teaching and learning method without the need of it being the controlling tool in the learning environment (Conacher, Taalas and Vogel 2004). In other words, the role of the ICT (usually a device and in this case the iPad) has to be explored in order to find efficient ways to use it. The data lessons included several issues that can be developed in order to make the integration of the iPads more fluent, for example the relationship between instructions and device collection and general guidelines when handling the iPad.

The pupils also had several insights to the development of using the iPad in language lessons. In the pupils' opinion the teacher should be at least somewhat interested in the devices so it would unload the burden of the pupils teaching the teacher. Also, the instructions could focus more on the showing features of a particular application and not after the first times to the general use of the iPad. Furthermore, the pupils also commented that using the iPads in lessons makes the lessons alone feel special, which is a good indicator of the motivation the pupils can have as a basis (STEPS: Synthesis report 2007). Nonetheless, the aim ought to be that the learners should be more a part of the ICT-use related to lessons and learning situation than merely attending lessons planned with a computer.

## *7.2 The learning situation*

Applying technology, in the present study's case the iPads, have been studied to have both momentarily and long-term positive effects on children's learning processes and results, which the present study's findings support (Hutchison et al. 2013). The effects could be seen despite of few obstacles met in instructing the tasks during the lessons. The obstacles were discussed in more detail in chapter 6 but as they refer mostly to the teacher's actions, they are not stressed here. Due to the short-term nature of the study, the present study's findings emphasize on the momentarily effects that the use of ICT created in the pupils: the pupils' strong emotions in both directions, the will to work independently when given the opportunity and show initiative in problem-solving as an individual or peer. The skills used and developed during the lessons were problem-solving skills, co-operative skills, initiative skills and also creative skills. Furthermore, the pupils were also able to refer to the kinds of task which emphasize these skills. In the interview the pupils wished for different kinds of future activities in language lessons and these required task types (movie projects, vocabulary tasks, group assignments) parallel with the skills emphasized when using ICT in learning environments.

Applying ICT into the learning situation can be done through multiple techniques. The ways the iPads were utilized during the data lessons by the pupils were the practices where ICT worked as a constructive and situating tool (Lim and Tay 2003). All the tasks required creativity and initiative from the pupils, and even though the learning outcomes were not as high as expected, the pedagogical ideas behind the tasks and activities existed and therefore, enabled the pupils to use their language skills self-drivingly (Lang et al. 2007). By completing individual and pair tasks in the lessons the pupils learned through different learning processes and attempted to reach diverse learning aims. Additionally, ICT was also used as another kind of aiding tool in every of the three lessons: ICT worked in the role information tool as the instructions were given as demonstrations at the beginning of the lesson and the teacher conducted them by utilizing the technical equipment in the classroom.

However, there are differences between whether the iPad is used as a personal device or as a device in pair or group activities. Despite the failures in instructions in the lessons regarding the tasks, which affected the task performances, it can be argued that the iPads can be applied in all forms of participant combinations. Nonetheless, it makes a difference whether the iPad is used in pairs or individually. In pairs the risk of power struggle is

possible and therefore, the inequality in the use of the device is presumable, when again working alone with an own iPad does not create this disadvantage. Working alone with the device enables more concentration as the pupil does not need to negotiate decisions with anyone or take turns in handling the device. Although the interest and need to see what others are doing, the curiosity, might be a hindrance in the learning process when every pupil is operating their own tablet. Nevertheless, all the activities done in the lessons with the iPad demonstrate that the appeal of the tablet computer is strong enough to keep the pupils focused on the device at least three lessons sequentially without any signs of loss in motivation. The novelty of the device can create some additional enthusiasm, which is a studied risk by Henderson and Yeow (2012), and partially can be accurate in this case as well because when comparing iPad to laptops in the interview, the pupils were not able to recall any done activities with the laptops and overall preferred iPads over laptops. However, the pupils did not criticize laptops intentionally but moreover argued for the iPad. The pupils discussed in the interview that the iPads enable new things to be done, they are fun to use both independently and in pairs or groups, and they create a somehow special atmosphere to the lessons. Nonetheless, none of the pupils would replace the text and activity books with iPads but prefer both of them to be used in the lessons to generate variation to the learning situations.

Moreover, the data and findings of the study present factors the iPad enables to be altered relating to learning situations. These aspects are closely related to the main points behind the MALL approach, which summarizes the potential of utilizing mobile ICT in education well (Conacher et al. 2004). With iPads the learning environment is portable, the communication with peers and the teacher is diverse and easy, and the saving and sharing of the pupils work is possible in multiple ways and simple. These features of mobile learning were seen in the lessons accordingly. Moreover, in learning situations the physical factors of the iPads' suitability for children are, for example, the features of size, weight and touchscreen technology. The iPad is light enough to a child to carry it, the screen is small enough to handle, the gestures required to use the touchscreen are simple, and the user-interface is not too complicated (Henderson and Yeow 2012). All of these features make the iPad suitable to be used in schooling and according to the study's findings fifth graders are fluent and initiative users of the device, and the iPad is a useful device in language learning.

Lastly, the applications used in the lessons all stressed diverse features in language learning. Two of the tasks involved working in pairs and one of them self-driven task performance. The iPad enabled interactive learning when performing the activities with *Dragon Dictation* (Nuance 2014) and *Puppet Pals 2* – applications (Polishedplay 2012), in both of which the pupils could see the outcome of their actions immediately and act accordingly. The pronunciation task with *Dragon Dictation* was an individual task, in which initiative skills were under development as it proved to be challenging to use the application and success in the activity. Nonetheless, the level of the pupil's accomplishment or failure was reported by the application in real-time and therefore the pupil could enhance one's methods to succeed when needed or contently examine one's correct feedback on the screen. In any case, the task involved an independent learning process and the pupils accomplished it pertinaciously in general. The *Puppet Pals 2*- task, on the contrary, was completely an interactive task from the application's user interface to the actions of the pupils. The task required co-operative skills as the pupils were working in pairs and creative skills as the pupils could execute their own vision in the task outcome. The first activity with the *iMovie* – application (Apple 2014b), then again, also required interactive skills but it also tested the basis level of the pupils' technical skills, as it was the first time this group was using the iPads in the English subject. The pupils demonstrated to have the basic features of the iPad under control and the aptitude to handle the device altogether. Hence, the ways the iPad is used in the learning environment influences the happening of the learning situations, and the mere presence of the technology does not suffice but has to exist as a support in the learning process.

# 8 CONCLUSIONS

The final chapter concludes the present study by discussing the relevance and validity of the study in general. The chapter's first sections deals with the limitations concerning the research committed, the second part discusses practical implications of the findings, and lastly the final sections finishes the study by conclusions discussion.

## *8.1 The validity and limitations of the study*

The present study was a short-term investigation conducted over three weeks in an elementary school in central Finland. The data was collected in four sessions, three of which were English lessons and one a group interview. The language lesson were recorded with iPads and the interview both video and audio recorded. Additionally, six pupils out of 18 took part to the group interview, which lasted approximately 30 minutes.

The overall limitation of the study was the nature of the study's approach and the challenges of finding relevant literature relating to the topic. The literature review consists of both national and international studies since there has not been much research on the issue in Finland so far.

The findings of the study cannot be generalized as the number of participants and the amount of data is not vast. More accurate and generalizable results would be achieved if the framework of the study were broader. The data collected was analysed by examining the data both in the recorded form and in a transcribed form. First I made notes of the lessons and the interview's data in four categories, which were formed according to the study's research questions. The categories guided by the research question were the framework for the data analysis section of the study. All the relevant data according to the categories was introduced and discussed but with a different division the insight of the analysis would have been different. In other words, the categorization of the findings is merely one possible way of labelling the data and was formed by me for this particular study. Additionally I did not have the opportunity to pilot my data collection, which would be essential in a broader study.

Also, the *Puppet Pals 2* is advertised as a suitable application for educational purposes since it is an interactive and a fun application. I would have preferred to have more time for the pupils to work with this application but the amount of lessons I could use for the data collection were limited because the iPads were reserved already for the next group to use them. If I could change the data collection, I would leave out the *iMovie* task and have the pupils work two lessons with the *Puppet Pals 2*- application. Then again, all the issues discussed in the present study would have not necessarily risen and the data therefore would have been poorer.

Furthermore, the pupils is in this group are used to being observed and video recording is not unfamiliar to them. They have also had a variety of devices in use preceding the iPads and are therefore, accustomed in having ICT present in the lessons. The study was on one hand successful due to that: the pupils did not change their behaviour in front of the recording devices or were not distracted by them throughout the lessons. On the other hand, a study with pupils less accustomed to using technological devices or being a target group of a study might have resulted in different findings. Additionally, the teacher is familiar with the iPads and felt no stress about integrating them into learning situations but as the focus of the present study is not the teacher's perspective, this was not a great

concern of the data collection or analysis as the teacher's proficiency level could have been any and it would have not majorly influenced the findings.

However, adding the aspect of teacher could have brought more intense classroom-related data analysis results. Nonetheless, the teacher's angle was intentionally left out of the study's relevant data range. Moreover, the teacher was informed about the topic of the study in advance and therefore could not be included in the analysable data. The pupils, on the contrary, were informed only that I would be collecting research data in the three lessons and that the topic would *not* be to examine their language skills. The existence of the study was basically the only information they received about the study. However, the presence of the researches and, in this case, evident recording devices on top of book piles and chairs, can still always affect the situation (Cappello 2005). However, the familiarity between me and the group and that this group is used to having spectators in their lessons, worked as an advantage in the study in this perspective and lessened the effect of awkwardness in the lessons.

## *8.2 Implications for practice*

Mobile technology and portable devices are a new element in schooling and their influence in education are a trendy topic in studies. However, even though they enable issues not possible in the past and alter the nature of learning environments and situations, the rudiments of education have not been under a threat. Mobile technology can bring new aspects to schooling and the need for practical, empirical studies with alternative solutions of harnessing ICT in the schools and teaching would be necessary and useful. However, the need for research on a general level of the effects of mobile technology in schooling is also necessary in order to the more detailed research to be possible. The present study offers a compact sample of data collected in an elementary school's fifth grade and presents situations where ICT is used and the outcomes of those lessons involving diverse tasks and task performances. The results provide insights of ICT-supported teaching and learning: what can be done, what might not work and which features function well in learning situations. In addition, the pupils' views and opinions are a valuable asset supporting the data collected in the lessons and mostly they are in line with the observations made in the data analysis.

This study was a challenging process but with already this modest amount of data, several findings and implications can be made. The findings imply that iPads can be used assuredly with children between the ages of 10 and 11, and the children are clearly apt to

operate and apply technology. The teachers should be aware of this and also make an effort in taking an interest or harnessing different technologies, as the pupils may be on a different level of competence to begin with. Thus, to gain positive effect of using ICT in schooling and enabling the pupils to exceed in their learning and skill development, the teacher ought to concern his/herself with the matter as well. The results of the present study's data also implies that teachers should collect feedback and opinions from the pupils about the use of ICT in lessons, with which the teacher can thereafter act accordingly. A gap in the communication between the pupils and teacher might lead to further issues and cause problems in ICT-supported learning situation when the expectations and contents do not meet.

The results of the study can be employed in multiple means. Primary school teachers can gain knowledge about the issue from their own, educational perspective and cultivate their teaching: learners have opinions on the topic and can help forming the technology supported learning environments and situations. Additionally, the aim and attitude must not need to be to achieve and succeed in everything at once and abandon every other teaching method used in the past but to experiment and gradually update and modernise the teaching to meet the level of the education the 21st century learners ought to receive. Also, the contents of the results can be valuable to teacher trainees as well and benefit their pedagogical studies because the findings imply, for example ways to try out tablet computers in lessons and show that the possibility of problems and failures is likely but not anything they could not improve themselves in. The pupils' opinions can also motivate future teachers as the pupils commented that they value a teacher who is interested in technology as well and can operate different technologies. Hence, a good time to experiment and err in teaching is for instance, the year of the pedagogical subject studies when one gains teaching experience on multiple educational levels, and the resources to utilize in teaching are vast. There is also freedom in planning and conducting the lessons, and also the received feedback on the experiments is valuable and therefore, also a trainee should harness and include a lot of ICT in his/her lessons and overall teaching pedagogy.

Nonetheless, the pedagogy behind the use of ICT can be seen as a challenge and is a common barrier in the process of integrating ICT in schooling. I also experienced this challenge as I planned the tasks to be conducted in the lessons and saw how some of them were somewhat successful and some not as much. However, after trying out different kinds of tasks in mere three lessons, the good points as well as the risks in the instruction situations and task performances could already be indicated and therefore, I was able to

gain knowledge of what to improve or alter for, and try out the next time. As Finnish research about the role of ICT in education, especially with practical approaches, does not exist that broadly, every teacher ought to themselves experience and find suitable, characteristic way of utilizing technology.

The present study implies that already after a short period of time one can learn a lot about the nature of ICT-use in the classroom, and develop rather quickly in the practises. Generally, a step towards new pedagogy for teaching supported by technology requires elements, which were seen in the lessons as well: shifting teaching from teacher-centred to pupil-centred one, and enhancing the self-driven skills of the pupils (problem-solving, critical thinking, decision making). Moreover, to create and comprehend suitable pedagogical aspect to ICT-supported learning should be approached from the perspective that what does ICT enable in learning in general – by discovering the possibilities of that for instance mobile technology brings, a teacher can began creating new pedagogy. The difference of ICT pedagogy to traditional pedagogy is that within traditional methods ICT is considered as a tool in aiding learning but in ICT pedagogy ICT is seen as an embedded part of the learning situation.

Nonetheless, it is a simple claim but the reality is different, as the resources are not usually up to the teacher to decide on, and schools and municipals are in greatly differing levels in terms of technical infrastructure. Thus, the amount of media and ICT-supported education pupils receive in Finland also varies and in that respect as well: if there are available resources, they should be utilized with the aim of providing learners the most beneficial education as possible. Furthermore, the learners belong to the latest generation which values and is accustomed to technology in their lives. The skills they need to succeed in the their future in the 21st century should be provided in education already and that way enable them to act and work efficiently in the modern society, in which an individual lacking the required technical skills can have unnecessary difficulties in performing. Therefore, the integration of ICT in schools is important and it is significant that today the role of ICT has been focused on more and its status' improvement is an agenda in many schools in Finland. Hopefully more schools will see the need to update their ICT-levels and integrate it more into the school's life. Also, the new, upcoming National Core Curriculum for Basic Education in 2016 will most probably include more references to and sections about educational ICT. However, we must wait and see what kind of influence the new NCC will have in education, and hope it will emphasize the importance of modernising schooling to more ICT-supported one.

Hopefully, the research on the field will also continue to increase and move towards offering practical solutions of the subject. The present study offers information about learning situation where ICT is utilized and therefore offers practical indications for the teacher to succeed in having technology involved in the learning environment. A teacher can be successful in technology integration as long as he/she recognises the role of ICT in the teaching and learning situations. As mentioned above, technology is not meant to replace every existing teaching method but to support and diverse the education. According to the data collected and the results of the present study, the most important issue in lessons are the instructions. They set the framework and aims for the working in the lesson and guide the learners, and if the task and its outcome has not got enough pedagogical value, it can become a stumbling block for the learning process. Pedagogical value can be achieved by acknowledging the reasons and aims behind the use a specific device, application or program. Hence, the teacher should consider the content and nature of the task, the purpose of the device used, and the pedagogy between them.

Also, the major change in the learning environment must be the aim of enabling independent learning and the learners to have the chance to assess their learning. These are the elements the new pedagogy should include and the methods to emphasize in mobile learning and teaching. For instance, in the second lesson with the pronunciation task, the elements I had considered were: pronunciation practise of textbook chapter's vocabulary that needed to be learned, a device which would enable self-driven task performance, and the possibility of self-correction and development through repetition and immediate feedback. The task was also the most successful activity of the three and the only issues arose in the lesson were about the technical side of the task: the functions of the application. The task was a not forced, ICT-supported activity, meaning that an existing task would be altered merely by forcing the completion to be done with a technical device, but the task was enabled by mobile technology and could have not been conducted otherwise. Hence, the task could be considered to be a coherent entity with pedagogy behind it as the pupils did not question the task itself, and the improvements to the learning situation could be now made as the pupils also had solutions to offer on the improvement possibilities. Also, in the lesson already the pupils aided each other and negotiated why the application was not functioning properly and how they could succeed better in the task.

Moreover, the aforementioned altered, more co-operative and self-driven atmosphere in the learning environment is possible to achieve with the integration of ICT, as in the present study with the appliance of iPads. The results indicate clear changes in the relationships between the pupils and also between the teacher and the learners. The dynamics of a group is able to develop to a more collaborative group, which was seen as the peer collaboration in the lessons. Additionally, with ICT, a more pupil-centred environment can be formed, and the teacher's role, then again, shifted to a more aiding than instructing role. Nonetheless, to achieve this ambiance and learning situation, the nature and succeed in the initiative instructions of lessons, before proceeding to use the devices are crucial and affect to the course of the following learning process. In general, a successful, ICT-supported learning situation, as in working with tablet computers, can offer diversity to the dynamics of a group and the course of a learning process because the devices enable different, more independent settings for working and create a peer-supportive learning environment. The increase in the pupils' collaboration was one of the main findings of the present study and implies that ICT utilized well, can result in a learner-centred and focused learning process, which is a desired and valued aim in teaching.

All in all, the present study offers few implications for future research as well: to study the role of ICT in elementary school more broadly and with an exclusive focus on a specific aspect, a longitudinal studies ought to be conducted. Likewise, studies more comprehensive in amount of collected data with a broader source of participants, would be useful and valuable. The research topic's angle of the studies must not be also wider but the aim should be to provide valid and coherent data of a defined phenomenon or issue. Moreover, studies possessing this aspect concerning merely the viewpoint of the pupils are needed in the future. Topics and approaches to these studies could be to test different applications, lengths of different types of projects, or comparative studies, for instance on learning results. .Comparative studies would be useful in order to reveal the dissimilarities and similarities between, for instance, different age-groups. Furthermore, the issue of gender differences was omitted in the present study but it could be studied how boys and girls adapt to and apply different technologies, or are there dissimilarities on how girls and boys work in pairs or groups. Also, an approach and research topic, which is more used in the field of IT, user-experiences of the device or application use, due to its possible, high informative value in results, is one the future subjects of the topic.

## *8.3 Conclusions*

The atmosphere in the classroom during the three lessons reflect well the attitudes and views of the pupils about the use of iPads in education. The lessons were filled with strong emotions, which most of them were positively-loaded and only one task, the pronunciation activity with *Dragon Dictation*, seemed to create negative feelings commonly in the group. Nonetheless, overall the pupils were enthusiastic and motivated, and the attitude in the task-performances was focused, willing to succeed, initiative and supportive. Moreover, the negative emotions were correspondingly caused by the failure in the task and were closely related to emotions of need and will to succeed: the pupils became frustrated and anxious if they did not achieve a set aim or the time was running out. In the pronunciation task some of the pupils questioned the functioning of the application but there were also pupils who had no difficulties with the app, and therefore, the application cannot be straightforwardly the elicitation of the emotions. The device itself did not arose any negative reactions and the criticism was mostly addressed towards the incomplete instructions in the lessons in general.

In the interview the pupils wished the iPads to be used more often and in longer projects, which is understandable as 45 minutes enables only short tasks and activities to be performed. Also, the will to use the device freely was mentioned and also argued by a comment that it would help in learning to use the iPad better. The pupils wish and also expect effort to be made by the teacher as well relating to the interest and expertise in using the iPad, in order to make the most of the lessons they are used in. Moreover, tasks with more than less framework are more suitable for the pupils and this is agreed both by the pupils and the teacher. The quantity and quality of English language in the tasks were not as good as expected but that is partly due to the inadequate instructions again. All in all, the pupils seemed and proved accordingly to have gained the skills of basic functions of the iPad and have motivation to apply the device in school as well.

The present study's results strongly indicate towards the fifth grade pupils having the worldview and skills of a net generation's child. The netizens are described as technology-focused, multi-tasking individuals with will to learn and receive immediate feedback and updated information. If the vision and will is to have any of these children of the net generation complete the matriculation examinations with a laptop or a tablet in the future, the role of ICT in education has to increase. The new NCC, being published in 2016, surely includes more sections and references about the use of ICT in schools and

lessons but still the practical side is missing. The interest in ICT and technical skills of pupils are at a good starting level in general and with the nourishment and development of these skills, the pupils' becoming successful and skilful learners of the 21st century is promising. The fifth grade pupils value a teacher who has taken an interest in the equipment being used, diverse use of the devices utilized and activities performed, the possibility of working both alone or with peers, and a relaxed and free atmosphere in the learning environment.

The aim of learning and teaching has not changed but the ways of executing and achieving them have: former generations feel comfortable with a pen and paper but today's pupil can more readily operate a tablet computer with finger pressure gestures on the screen. Hence, the new generation learns in a new way and utilizing ICT in the learning processes and environments are a way of achieving set learning results. The present study explored integration possibilities of the tablet computer iPad into English classroom with pupils aged 10-11 and the findings show that utilizing ICT is appealing and beneficial, and also desirable by the pupils. Moreover, integrating ICT first into elementary schools and their learning environments is essential, and throughout the diverse and up-to-date education which is enabled and supported by mobile technology in specific, is the first step towards forming the field where data can be gathered and examined in future research, and documented for future generations. The second step is to succeed in the integration by supporting the teachers in the process, the teachers cultivating in the matter, maintaining effective communication between the learners and the teacher, and most importantly, offering functional learning situations to the learners with the appliance of technology. Furthermore, topics and themes for future research are still to focus more on the pupil's angle and conduct also long-term studies about the relationship between pupils and ICT in school. Especially studies conducted in elementary schools are important as it is where the educational path for a learner begins

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# APPENDICES

## Appendix 1. The group interview questions for pupils

**Haastattelukysymykset**

**Yleistä**

- Onko joku teistä käyttänyt iPad:eja muualla kuin koulussa?
- Jos on, kuinka kauan iPad on ollut käytössä?
- Käytätkö kuinka usein: päivittäin, viikottain, kuukausittain?
- Mihin käytät?
- (Millon olet käyttänyt laitetta ensimmäisen kerran?)

- Onko jotain mitä olette oppineet vain koulussa iPad:ien käytöstä?
  - Mitä? Tuleeko mieleen esimerkkiä?
- Minkälaisia tehtäviä teette iPad:eilla eri aineiden tunneilla?
- Onko aineiden ja tehtävien välillä selkeä ero?
  - Miettikää esimerkiksi matematiikan/äidinkilen ja englannin tunteja?
- Millälailla opettajan innokkuus ja osaaminen vaikuttaa?
- Mitä niiden käytöllä on eroa läppäreiden käyttöön?
- Mikä on parasta kun käytätte iPad:ejä?
- Mikä olisi sellaista  mihin niillä ei pysty tai on hankalaa tehdä?
- Kuvittele että olisit opettaja, mitä tekisit iPadeillä?
  - Mitä haluaisitte tehdä iPadeilla oppitunneilla?

**Kuvatut tunnit**

- Minkälaisia tunneilla tehdyt tehtävät olivat? (helppoja/tylsiä..?)
- Miten tehtäviä olisivat voineet olla parempia?
- Mikä oli kivoin tehtävä/sovellus?
  - Osaatko kertoa miksi?
- Oliko mukava tehdä parin kanssa töitä vai olisitko halunnut tehdä joka kerta yksin?
  - Miksi näin?
- Miltä tuntuu lukea ääneen laitteelle/videolle?
- Miltä tuntuu kuvata tai olla kuvattavana laitteella?
- Miltä tuntuu kuulla omaa ääntänsä laitteesta?

**Työkalu – näkökulma**

- Tallennetaanko työt yleensä jonnekin, minne? Millaista se on? Ymmärrättekö miksi niin tehdään?
- Opetetaanko teillä muuta kuin sovellusten käyttöä? Mitä?
  - Asetuksien vaihto jne.
- Millälailla pystytte katsomaan kavereiden töitä?  (comm.)
  - Onko mukava pystyä jakamaan omia töitä?
- Millaiset projektit tai tehtävät ovat mukavimpia tehdä?
  - Ovatko ns. valmiit tehtävät kivoja vai onko mukava saada itse luoda esim. tekstiä? (consrt.)
- Haetteko tietoa laitteilla? Miten laitteilla pystyy hakemaan tietoa?  (inf.)
  - Miten, mistä?
- Miten pelien pelaaminen eroaa esim. Lautapeleistä? (situat.)

**Lopuksi**

- Lisättävää? Tuleeko mitään muuta mieleen?

**Appendix 2. The consent form for recording the lessons and the interview.**


Olen englannin kielen pääaineopiskelija Jyväskylän yliopistossa ja teen pro gradu –tutkielmaa. Tutkimukseni kohteena on tietotekniikan rooli luokkahuoneessa, ja erityisesti tablettitietokoneiden iPad:ien käyttö englannin kielen tunnilla. Tutkimuksen aineisto tullaan pääosin keräämään videoimalla oppitunteja ja lisäksi haastattelemalla oppilaita. Haastattelu on ryhmähaastattelu ja sekin videoidaan. Kaikki kerätty aineisto tullaan käsittelemään niin että oppilaita ei voida tunnistaa tutkimuksessa. Koululle myönnetyt tutkimus- ja haastatteluluvat on huomioutu.

TUTKIMUSAINEISTON KÄYTTÖ

- Tutkimusaineisto ja –tulokset käsitellään luottamuksellisesti.
- Tutkimusaineisto säilytetään siten, ettei ulkopuolisilla ole siihen pääsyä.
- Tutkimukseen osallistuneiden anonymiteetti säilyy myös tutkimusaineistoa raportoidessa.
- Tutkimusaineisto tuhotaan tutkielman valmistumisen jälkeen,
  joten pysyvää aineistoa ei jää.

Jos Teillä ilmenee kysyttävää tutkimuksesta, minuun voi ottaa yhteyttä alla oleviin yhteystietoihin ja vastaan mielelläni kysymyksiinne.

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**Appendix 3. Technical specifications of the iPad (4th generation) used in the lessons (Apple 2014d)**

**Operation system:** iOS7

**Wireless technology**: Wi-Fi, Bluetooth 4.0

**Memory**: 128 GB

**Screen:** Retina display, 9.7-inch (diagonal) LED-backlit Multi-Touch display with IPS technology

**Size and weight:**

Height: 24.1 cm
Width: 18.7 cm
Depth: 0.94 cm
Weight: 652 g

**Battery:** Built-in 42.5-watt-hour rechargeable lithium-polymer battery

**Chip:** Dual-core A6X with quad-core graphics

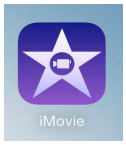
**Built-in Apps**

- Safari
- Photos
- App Store
- Maps
- Photo Booth
- Reminders
- Camera
- Mail
- FaceTime
- iTunes
- Music
- Clock
- Calendar
- Messages
- Newsstand
- Videos
- Game Center
- Contacts
- Notes

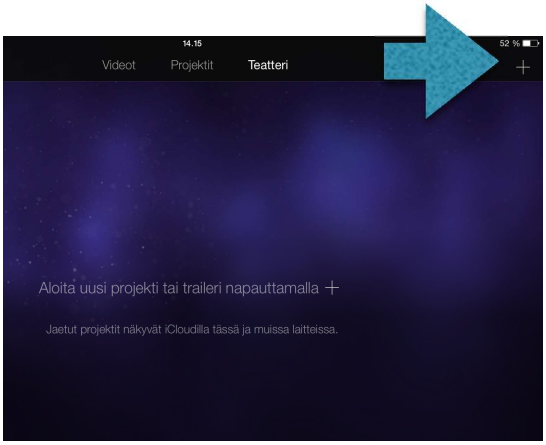
**Appendix 4: Pupils' printed material in the first lesson: iMovie**

# iMovie: Hold your horses!

Valitse oletko orava vai hevonen.
Ottakaa omat paperit.




Avatkaa iPad:llä iMovie.




Aloittakaa uusi projekti painamalla **+**.


Valitkaa **uusi elokuva**.

Orava aloittaa ja ottaa iPad:n.
Orava kysyy kysymykset englanniksi ja kuvaa samalla toista, joka vastaa kysymyksiin.
Hevonen vastaa kääntämällä suomenkieliset lauseet englanniksi.
Vaihtakaa osia ja hevonen kysyy kysymykset.
Lopuksi tallentakaa elokuva.

JOS JÄÄ AIKAA: Kysykää vuorotellen toisiltamme kappaleen sanoja tekstikirjan sivulta 37.

Kysykää 3 sanaa ja vaihtakaa.
Orava aloittaa.
Voitte kuvata kun kyselette: se kuvaa joka kysyy.

|  |  |
|---|---|
| 1. What kind of horse does Max have?<br>(Calm and nice.) | 1. Rauhallinen ja kiva. |
| 2. Is the horse big or small?<br>(He is big.) | 2. Se on iso. |
| 3. Which foot does Jason put into the stirrup?<br>(His right foot.) | 3. Hänen oikean jalkansa. |
| 4. Where are they going to ride?<br>(To the bay.) | 4. Lahdelle. |
| Vuoronvaihto. | Vuoronvaihto. |
| 5. Hevosen nimi on Max. | 5. What is the horse's name?<br>(The horse's name is Max.) |
| 6. Kuin oikealta cowboyta. | 6. How does Jason feel like?<br>(Like a real cowboy.) |
| 7. Max pitää hiljaisemmasta tahdista. | Why doesn't Max like to gallop?<br>(Max likes a slower pace.) |
| 8. What is Max nuts about?<br>(He is nuts about swmming.) | 9. Hän on hulluna uimiseen. |

|  |  |
|---|---|
| Jalustin<br>(a stirrup) | Jalustin |
| Ei kukaan<br>(nobody) | Ei kukaan |
| Todellakin, varmasti<br>(certainly) | Todellakin, varmasti |
| | |
| Hitaampi | Hitaampi<br>(slower) |
| Tuskin | Tuskin<br>(hardly) |
| Olla huolissaan | Olla huolissaan<br>(worry) |
| | |
| Minne hevosen pää katosi...?<br>(Where did the horse's head go?) | Minne hevosen pää katosi..? |
| Toivoa<br>(hope) | Toivoa |
| Eikä<br>(neither) | Eikä |
| | |
| Sinun pitää laittaa.. | Sinun pitää laittaa..<br>(You are supposed to put..) |
| Hypätä, loikata | Hypätä, loikata<br>(hop) |
| Vasen | Vasen<br>(left) |

## Appendix 5: A selection of screens of Puppet Pals 2 –application

1) The menu screen for locations selection


2) The chosen settings for the movie, in which objects can be added to

3) The menu screen of available characters


4) The menu screen of available vehicles


5) The menu screen for background music selection


6) Recording the movie


7) Saving the movie