Does Space Matter?
Students' and Teachers' Perceptions on Their Modernized Language Classroom as a Learning Environment.

A Master's thesis

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Tiivistelmä – Abstract

Erilaiset oppimisympäristöt ja niiden merkitys oppimisessa ja opetuksessa ovat olleet hyvin paljon esillä viime vuosien aikana. Opetusmetodit ovat kehittyneet kohti konstruktivistista suuntausta, ja opetustiloja on tämän vuoksi alettu kehittää vastaamaan nykypäivän muuttuneita vaatimuksia. Vuoden 2014 Perusopetuksen opetussuunnitelman perusteet sekä vuoden 2015 Lukion opetussuunnitelman perusteet painottavat oppimisympäristön merkitystä sekä pyrkivät edistämään konstruktivismin käyttöä opetuksessa. Halusimme tämän pohjalta tutkia modernin oppimisympäristön vaikutuksia oppilaisiin ja opettajiin.

Tämän tutkimuksen tutkimuskohteena oli jyväskyläläisen koulun uudistettu kieliluokka sekä sitä käyttävät oppilaat ja opettajat. Tutkimuksen tarkoituksena oli selvittää, miten käyttäjät kokevat modernin oppimisympäristön verrattuna perinteisempään luokkahuoneeseen niiden fyysisiltä, psykososiaalisilta ja pedagogisilta ominaisuuksiltaan. Halusimme lisäksi tutkia opettajien näkökulmasta sitä, tuoko moderni luokkahuone uusia mahdollisuuksia kielten opetukseen ja lisääkö se konstruktivististen opetusmetodien käyttöä. Halusimme myös saada selville oppilaiden ja opettajien yleisen mielipiteen uudistetusta luokkahuoneesta. Tutkimuksen teoreettinen viitekehys keskittyy oppimisympäristöajatteluun, oppimisympäristön fyysisiin, psykososiaalisiin ja pedagogisiin pirteisiin sekä konstruktivismiin. Työmme on monimetoditutkimus, jossa on käytetty sekä laadullisia että määrällisiä tutkimusmetodeja. Aineisto kerättiin molemmilta ryhmiltä sähköisen kyselylomakkeen kautta. Tutkimukseen osallistui 183 oppilasta ja neljä kieltenopettajaa. Aineisto analysoitiin sekä tilastollisesti, keskittyen summamuuttujiin, että sisällönanalyysin kautta.

Tutkimustulokset osoittivat, että oppilaat viihtyvät modernisoidussa luokkahuoneessa paremmin kuin perinteisessä luokkahuoneessa. Modernin luokan fyysiset ominaisuudet, kuten muunneltavat huonekalut ja sohvaryhmät, olivat oppilaiden mielestä selkeästi paremmat kuin perinteiset pulpetit ja tuolit. Opettajat puolestaan eivät pitäneet modernia luokkahuonetta kovinkaan erilaisena oppimisympäristönä kuin koulun muitakaan luokkahuoneita. Opettajat eivät ole mielestään muuttaneet opetustapojaan modernin luokkahuoneen myötä, ja tätä väitettä tukivat myös oppilailta saadut vastaukset. Vaikka tutkimus osoitti oppilaiden pitävän modernista luokkahuoneesta enemmän kuin perinteisestä, tutkimustulokset eivät kerro mitään tilan vaikutuksesta oppimistuloksiin. Jotta voisimme todella selvittää opetustilojen uusimisen hyödyn, tulisi uusittujen tilojen tuomia muutoksia opetuksen ja oppimistulosten suhteen tutkia enemmän. Tutkimuksen kahtiajakoiset tulokset antvat kuitenkin syytä pohtia yleisellä tasolla oppimisympäristöjen uudistamisen tuomia hyötyjä ja sitä, miten oppimisympäristöjen modernisoimisen aiheuttamat hyödyt voitaisiin maksimoida etenkin pedagogiikan kannalta.

Asiasanat – Keywords learning environment, constructivism, language learning and teaching, modernized classroom
Säilytyspaikka – Depository JYX-julkaisuarkisto
Muita tietoja – Additional information

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1 INTRODUCTION

It is a well-known fact that western societies are going through enormous changes at the moment. Due to technological innovations and globalization, the nature of job markets and different professions will alter. This will also affect the nature of teaching; the work force of tomorrow will need different types of knowledge and skills than the older generations. As the world continues to change and evolve, so do educational theories. The process of learning is seen differently than before and the nature of teaching is also slowly changing. Hence, the operational culture of schools is constantly being renewed, and therefore the interest on learning environments is also increasing. However, the size, form and basic furniture in classrooms have not changed much from previous centuries. It has been discovered that the invariable space, furniture and technological solutions do not offer teachers and students a chance to take advantage of the increasingly versatile opportunities offered by modern teaching and learning theories. Thus, the stability of classrooms has created a factor that makes it more difficult to change the operational culture of schools. (Kuuskorpi 2012: 6).

The standard for many classrooms in today's schools is to have desks aligned in rows in the room. This structure does not encourage interaction between students but focuses more on the student as an individual completing their own work. Classrooms are not well-suited to today's curricula but more appropriate to earlier teaching methods. However, in recent years new schools have been established with the aim of making the physical construction of the learning environment more suited to modern times and a new way of thinking.

Students spend a large part of their days at school, which is why the learning environment should meet their various needs and make students feel comfortable in the learning situation. The prevailing pedagogical trends, social structures, teacher training, educational values and ideals remodel the conceptions of a good learning environment in different eras. (Piispanen 2008: 3). One reason for the growing interest on the concept of learning environment is probably the shift in pedagogical thinking from the behavioristic model to the rise of humanist, cognitive and constructivist teaching

philosophies (Manninen 2007: 21). Additionally, another reason for the popular discussion on learning environments has to do with the growing interest on the use of technology in schools. Computers, tablets and the internet are nowadays an essential part of learning and teaching, thus technology must be included in a good and functional learning environment. (Kuuskorpi 2012: 66-67)

Improving learning environments has also been seen as an important area in the Finnish education system. The renewed curricula in Finland highlight the significance of learning environments on students' learning, which has had an influence on the governmental funding of new learning environments, as well. The Finnish Board of Education granted a state discretionary assistance for the development and diversification of learning environments for the first time in 2007. During the period of 2007-2012, there have been a total of 538 positive funding decisions to general education learning environment projects. The amount of grants has been a total of EUR 23.7 million. (Kankaanranta, Mikkonen and Vähähyyppä 2012: 5).

Since such a substantial amount of government funding is spent on renewing learning environments in Finland, it is reasonable to ask whether the design of new facilities for learning acutally improves the environment pedagogically thus making this an object worth funding. It is also vital to do research on the processes of creating new types of learning environments in order to learn how to modernize learning environments in rational and cost-efficient ways with the best possible outcome. These types of studies, however, are somewhat nonexistent, which indicates that there is a gap in the field of learning environment research. The Head Architect of the Finnish National Board of Education, Reino Tapaninen, has mentioned that there is a need for research that investigates the user experience of new school facilities and its impact on both students and teachers (Toikka 2015: 5). This study was conducted in order to fill that gap.

The interest on developing new types of facilities for learning to meet the expectations of the 21st century learning has also risen in the target school of this research where an old classroom was renovated and modernized for the purposes of foreign language learning. In this study, we will examine students' and teachers' perceptions on their modernized language classroom. The students' point of view will focus on the physical, psychosocial and pedagogical aspects of the classroom. Teachers' point of view will

concentrate on the changes made in the modernized learning environment and how it affects language learning and teaching and especially how the modernized classroom promotes constructivism. With this research we are hoping to see if a classroom renovation can actually improve students' perceptions on the learning environment and teachers' pedagogical approaches.

The study was conducted through two separate surveys. Students in two different classrooms were asked to express their opinions on their current EFL classroom by indicating their level of agreement with a list of statements. A group of students answered the questionnaire in the modernized classroom whereas another group answered the questionnaire in a more traditional classroom. The students' answers were then compared in order to see if there was a statistically significant difference in the responses. The teachers got to answer an open-ended questionnaire that focused on the pedagogy and usability of the modernized classroom for language teaching purposes and their responses were analyzed through content analysis. Hence, both quantitative and qualitative methods were used in the research. All in all, 183 students and 4 teachers answered the questionnaires.

The concept of learning environment used in this study will be described first. This is followed by a detailed explanation of the concept of constructivism in chapter three. The fourth chapter of this thesis includes the research questions of the present study and a thorough explanation of the methods used for data collection and analysis. The fifth chapter focuses on reporting the contributions of both the student and teacher participants on this study. After the results have been analyzed they will be discussed in length and finally, a conclusion of the main points of this thesis will be presented.

2 THE CONCEPT OF LEARNING ENVIRONMENT

There has been an increasing amount of interest towards learning environments among educational scholars in the past few decades. There are several educational journals focusing on the issue, such as *Learning Environment Research*, which was first published in 1998, and *Smart Learning Environments* launched in 1990. Moreover, In July of 2016 Google search found over 14 million hits with the phrase and the number will most

likely continue to grow. The term learning environment is often connected to information and communications technology (ICT) designed for teaching and learning purposes. *Smart Learning Environments*, for example, publishes research articles that focus on finding new educational innovations with the help of ICT (Rada and Yazdani 1998: 3). Engeström (2009: 18-19), however, criticizes the field of educational ICT for adding ideological and promotional attributes, such as 'innovative', 'dynamic' and 'authentic', in front of the term without having a firm theoretical background on the matter. The use of positive catchwords becomes tempting when researchers are not fully aware of the theory behind the phenomenon.

Though our study has very little to do with ICT and its implementations on the field of learning environment research, understanding the concept of learning environment is vital for our research. Therefore, we will begin this paper by first discussing the wide and multidimensional concept of learning environment and its rise to educational discourse in order to grasp the idea behind the phenomenon.

2.1 The ambiguous nature of learning environment and its rise in educational discourse

According to Mononen-Aaltonen (1998: 164), the concept of learning environment entered in educational discourse along with the idea of constructivist learning theory and the rise of using information technology in teaching. Manninen et al. (2007: 7–9) see the rise of learning environment taken place in the late 20th century though the idea or the concept is older than that. Previously, learning environment was understood simply as a classroom isolated from the world outside. Since then, the perspective has expanded and learning environments are analyzed in a larger sense. Today, the concept of learning environment can be seen as a model for education design and a way of thinking that discovers new ways for teaching and learning. It has played a role during the shift from teacher-centered to learner-centered approach in the field of education and pedagogy. Mikkonen et al. (2012: 5) emphasize that nowadays a broad understanding of the concept of learning environment is an important tool for comprehending the nature of learning and teaching.

In the 21st century, the rising interest on learning environments has also reached governmental levels. The Organization for Economic Cooperation and Development (OECD) has paid attention to the phenomenon by carrying out an international study called Innovative Learning Environments (ILE) that focused on finding creative ways of organizing learning and positively influence educational reform (OECD 2013: 3). The Ministry of Education in Finland has also become interested in the phenomenon due to which the development and funding of learning environments has been quite remarkable in the country. In 2007, The Ministry of Education allowed funding for designing better and more versatile learning environments for the first time. From 2007 to 2012, the Government has sponsored a total of 538 projects with over 23 million euros in Finland. The projects have focused, for instance, on finding new locations for learning outside the traditional school area and enhancing the physical setting of learning. (Mikkonen et al. 2102: 5.) The Finnish National Core Curricula for Basic Education of 2004 and 2014 also cover the topic by defining the concept, dictating the features of functional learning environments and offering principles for their improvement (Perusopetuksen opetussuunnitelman perusteet 2004: 16; Perusopetuksen opetussuunnitelman perusteet 2014: 29).

Though the term learning environment has existed for decades and the importance of the issue is recognized even on governmental level, there is still not a mutual understanding of the definition for the term in the field of education. In a report by UNESCO (2012: 12) it is noticed that there is a lack of clarity among scholars in the matter of defining the concept of learning environment because the term is used imprecisely both within and across disciplines. It seems that every scholar, government official, educational specialist or architect focused on learning environments defines the term based on their viewpoint and interest. Whether one is interested in using a traditional classroom setting, technology or endless possibilities offered outside the school for teaching and learning, it has an effect on how learning environment as a term is understood. Manninen et al. (2007: 9) mention that research and available literature on learning environments are highly compartmentalized according to educational level, learners' age and most importantly different types of learning environments.

It also seems that cultural and geographical factors highly affect the viewpoint in the field of learning environments. It has been stated by UNESCO (2012: 12) that learning

environment as a term has historical and cultural referents that are not necessarily translated or understood similarly across the world, which complicates current international discourse on the issue. As previously mentioned, the goal of learning environment research in Finland seems to be the broad understanding of the nature of learning, through which the design of new learning environments is made possible. Outside Finland, however, environmental psychology is often used as a paradigm for learning environments. According to Westling Allodi (2007: 159), the theoretical foundation of learning environment research lies on the studies of psychosocial environments by Rudolph Moos from the 1970's. Fraser (1998a) also acknowledges the importance of Moos to learning environment research and says that a notable feature in the history of the filed is the number of versatile questionnaires developed and used for the assessment of students' perceptions of the psychosocial aspects of their classroom environments. Due to the significant growth of the field of learning environment, a journal called *Learning Environments Research* was launched in 1998 with a focus on the psychosocial significance of the physical environment. Hence, it seems that scholars abroad are quite heavily focused on the classroom setting of learning and the scientific assessment of psychosocial learning environments as opposed to the comprehensive Finnish approach that concentrates on the progress and development of new learning environments through the broad understanding of the nature of learning. Naturally, this type of ambiguity among scholars makes the definition of the term challenging.

Indeed, the word learning environment as a term seems quite vague and an attempt to formulate a global view on the matter can be challenging due to different approaches among scholars. One may simply explain learning environment as a place or space where learning occurs. In fact, Meisalo et al. (2000: 65) define the term merely as an entity where learning takes place. Also Wilson (1996: 3) says that learning environment refers to a place where people try to make sense out of things and solve problems with the help of different resources. Nowadays, in the world of life-long learning, it is understood that people learn throughout their lives and learning is not limited to certain space or a building such as school. If we, then, follow the definitions above, the whole world should be considered as a learning environment. This is actually how Nuikkinen (2006: 16) conceptualizes the term. Instead of the term learning environment, Nuikkinen uses the words "comprehensive study environment" that refers to the whole

school and its surrounding areas – both built and natural. As we include Internet and different public space, such as theatres, museums, libraries and industries, to possible places for learning, the learning environment expands enormously and becomes practically endless.

The definitions above consider basically any location a learning environment whereas several other definitions emphasize the purpose of learning. Manninen et al. (2007: 16) state that a learning environment needs to have pedagogic goals in order for it to be called a learning environment. In fact, this can be seen in many existing interpretations of the term. According to Lehtinen et al. (2007: 249), the concept of learning environment describes the set of working methods that has the purpose of improving learning outcome. Vahtivuori et al. (1999) use the term study environment, which they see as an operational environment that has been built for enhancing the possibilities for learning. Manninen and Pesonen (1997: 268) define learning environment as a place, space, community or a means of action that has the purpose of enhancing learning. The same viewpoint can be seen in the new Finnish National Core Curriculum for Basic Education (2014: 29) where learning environment is seen not only as space and locations but also as communities and practices involved in learning. Also different equipment and material used for teaching is considered to be part of the learning environment. According to the OECD Centre for Educational Research and Innovation's (2013: 22–23) definition, a learning environment is an ecosystem of learning including the activity and outcomes of the learning process. The heart of each learning environment is the pedagogical core that is composed of four elements: learners, teachers, content and resources. The interaction of these elements creates the learning environment.

As the comprehension of the process of learning has expanded, it has become useful to categorize learning based on the location. The location of learning varies particularly when one is learning a language. In the matter of second language learning, for example, when a language learner is being constantly exposed to the target language, it is quite natural to learn inside as well as outside the school setting. In some other cases, however, learning a new language occurs completely without any pedagogical teaching in a school facility. Hence, it might be justified to say that when it comes to language learning, living environment equals learning environment. There is a lack of consensus

among scholars in the field of language learning in defining the differences between second and foreign language learning and this study will neither take a stand on the matter nor make a distinction between the terms. Instead, we will consider both foreign and second language learning as non-native language learning.

In order to analyze different learning environments of language learners, Jalkanen et al. (2012a: 71) have divided the concept into three subcategories: formal, informal and nonformal. Formal learning environment usually refers to institutionalized space, such as schools. Informal language learning occurs outside the school during free time when the goal of action is not specifically on language learning. In nonformal learning environments, such as clubs or training centers, the goal is to learn languages but teaching occurs outside formal school setting. Due to the role of English as a lingua franca, English language learners in Finland and other countries are in touch with English daily by hearing, speaking, writing and reading the target language especially through media, which makes it difficult to locate learning solely in the school premises. However, being in contact with the target language does not necessarily mean that language learning occurs and, thus, drawing the line between language learning and simply being exposed to the target language can be difficult. Nevertheless, Kuuskorpi (2012: 63) says that as we take technology and society more involved in teaching and the line between formal and informal teaching becomes vaguer, the definitions for learning environment become wider and more complex.

For the purpose of our study we have defined learning environment as the setting created for the purpose of learning through interaction between learners and teachers with the help of resources found in the environment. Due to the focus of our research, we take quite a traditional and formal approach to the phenomenon and focus on the classroom setting of learning. Though we acknowledge the rising importance of contexts outside the classroom and the school building for language learning, we believe that the classroom still is the most important place for formal learning because it is used most frequently as a location for learning in our education system and will continue to be so even in the future. Therefore, we believe that it is important to focus on understanding the role of the classroom as a learning environment and with the help of research find solutions that would make classrooms better locations for learning and teaching.

2.2 Different views of learning environment

Since the concept of learning environment has such a wide variety of interpretations, it has become common to divide the concept into different levels that help conceptualize the meaning of the word. Manninen et al. (2007: 36–37) have divided the concept of learning environment into five different views that focus on different aspects of space. They see learning environment as a unity of technological, local, social, physical, and pedagogical views. Figure 1 demonstrates these different views of learning environment. Though Manninen et al. use the word didactics, we have replaced it with the word *pedagogy* due to negative connotations of the word didactics in Anglo-American educational jargon. Since both terms are closely related, pedagogy is used as a synonym for didactics in this study. (See Johnson Longfor 2014: 6–8.)
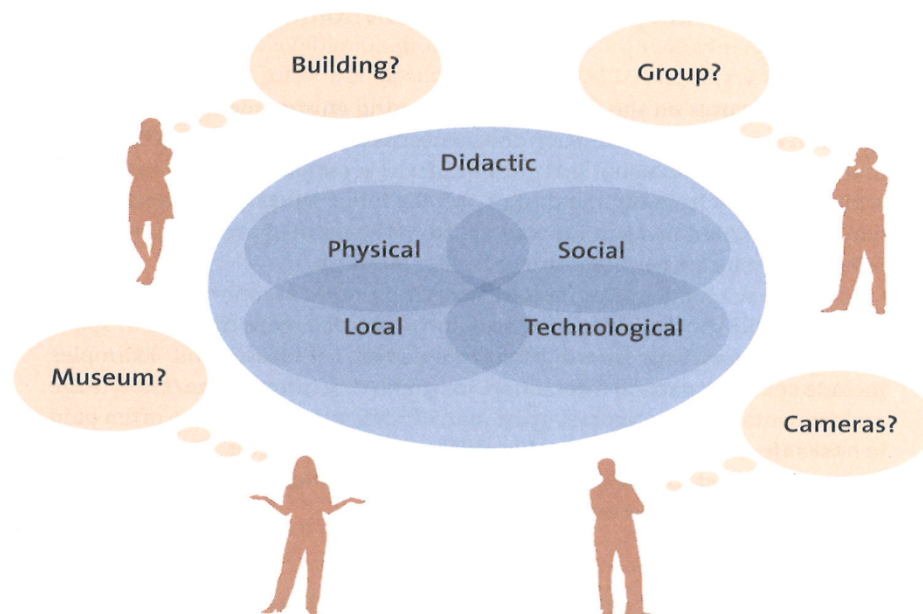
Figure 1. Five views of learning environment by Manninen et. al (2007: 37).

The technological view covers the use of information and communication technologies (ICT) in the learning environment in two different ways according to Manninen et al. (2007: 73–74). Firstly, ICT enables communications and information processing in learning environments with the use of different technical tools, such as computers, smart boards or document cameras, as a means of demonstration. Secondly, ICT itself can work as a learning environment when a product or software, most commonly the Internet, is being adapted for learning.

In the local view, the learning environment is observed in terms of places and areas outside of school (Manninen et al. 2007: 36). Houtsonen (2002: 132) says that learning in a classroom is often symbolic and abstract and it usually lacks contact in the 'real world'. In the school yard and the surrounding areas students get a chance to observe their surroundings and link the information taught in the classroom to actual events. The local and technological approaches, in particular, set the location for learning into new contexts and outside the traditional classroom. The local view is also connected to informal and non-formal learning environments though formal learning can also occur outside the school facilities during school field trips, for example, when the process of learning is dictated by a schoolteacher and a curriculum but the location of learning is temporarily different from a normal school setting.

At the social level, the environment is observed from the intellectual and psychological point of view and the focus is on interaction and human relations (Manninen et al. 2007: 36). The physical learning environment as a viewpoint emphasizes the environment as a physical space. Built as well as natural environments and material found in the location and used for learning purposes are a part of physical learning environment. Finally, the pedagogical view focuses on teachers' input and their methods of teaching and enhancing learning (Nuikkinen 2006: 14). According to Manninen et al. (2007: 16), every environment includes physical and social characteristics but only the pedagogical dimension turns an environment into a learning environment. As seen in Figure 1, the physical, social, local and technological views are placed inside the pedagogical (didactic) view to emphasize the role of pedagogy.

The idea of dividing the concept of learning environment into different subcategories or levels has been highly used by scholars and government officials when explaining the concept. However, there does not appear to be a consensus on the amount and nature of subcategories used in different definitions. Fraser (1998a: 3), for example, states that learning environment is the social, psychological and pedagogical context in which learning occurs and which have an effect on students' achievements and attitudes. Freaser's definition, therefore, excludes the role of the physical environment and emphasizes psychology, instead. Doppelt and Schunn (2008: 196) have the same type of approach as they also state that the term refers to the psychology, sociology and pedagogy of the contexts in which learning takes place and their influence on students'

achievement. Goodyear (2001: 6), on the other hand, sees learning environment as the physical, social and cultural setting in which learners work, thus leaving the pedagogical aspect out completely. The idea of learning environment is also included in The Finnish National Core Curriculum for Basic Education (2004: 16) where the term refers to the physical, psychological and social aspects of space where learning takes place.

Dividing the term into different subcategories can also be a good basis for research as it helps to understand the multidimensional nature of the matter and ensure that all possible aspects of the phenomenon are being considered in the research. For example, according to Mikkonen et al. (2012: 5–6), all development projects related to learning environments funded by the Finnish government in 2008 were categorized into local, social, technological and physical subcategories. Furthermore, when developing a tool for the assessment and development of learning environments for school management in Finland, the theoretical background of the tool was created by using constructivist and sociocultural learning theories and the subdivision of learning environment into physical, social and psychological views (Silander and Ryymin, 2012).

Among scholars the subdivision of the term into physical, social, psychological and pedagogical views has been quite popular. Nuikkinen (2006: 14) presents that learning environment consists of these four elements. Also Brotherus et al. (1999: 77) list the same subcategories in the definition of learning environment. Lodge (2007: 150) studied the drawings of learning environments made by 6- and 7-year-old children and categorized the drawings into four different subcategories based on their content. The analysis showed that in the drawings children wanted to express 1) their role as a learner and their relationship with other students and teachers, 2) classroom and learning activities and tasks, 3) the physical features of the classroom and 4) issues concerning appropriate behavior in classrooms. These different themes could be further categorized under the features of social, pedagogical, physical and psychological learning environments respectively. Piispanen (2008: 22–23) has also studied learning environments based on children's drawings and used the same categories as one of her theoretical approaches.

In our research, we will also focus on psychological, social, pedagogical and physical views. Since the main interest of our research is on one classroom, we believe the local view used by Manninen et al. (2007) is irrelevant for us because the locality refers to space outside the school. Additionally, the technological view that Manninen et al. list is included in the physical level of the learning environment in our research as we consider technology to be part of the teaching equipment found in the classroom. However, we have combined social and psychological views into one category as Piispanen (2008: 22) has done in her research. Piispanen sees a clear connection between the two views and says that an individual's psychological feelings and experiences that are based on social interaction shape the environment. We also believe that social and psychological factors are deeply intertwined and therefore their separation is insignificant. Figure 2 adopted from Piispanen (2008) illustrates the different levels of learning environment used in our research. The picture illustrates how the different levels are intertwined.

PHYSICAL

PSYCHOSOCIAL   PEDAGOGICAL
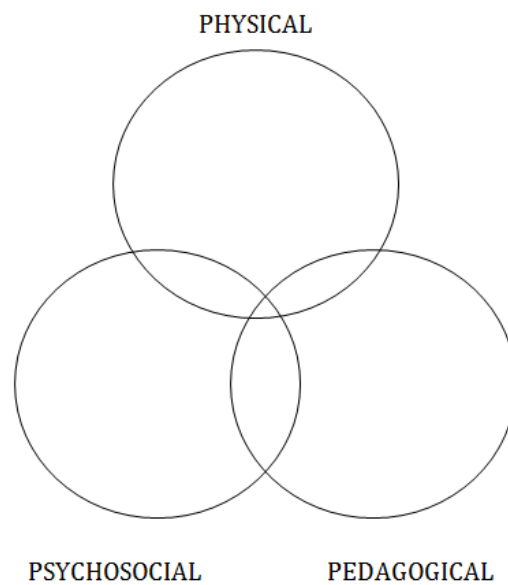
Figure 2. Different dimensions of learning environment as described by Piispanen (2008: 23).

2.3 Physical, psychosocial and pedagogical learning environments

In this chapter we will focus more in depth on the three dimensions of learning environment that are crucial to our research. These dimensions will play an important role in our questionnaires designed for students and teachers.

2.3.1 Physical learning environment

The Finnish National Core Curriculum for Basic Education (2004: 16) states that the physical learning environment consists of the school building along with available teaching and learning material. Additionally, the natural and built surroundings of the school area are part of the physical learning environment. According to the Organisation for Economic Cooperation and Development (OECD n.d.: 4) the physical learning environment is the physical space where learners, teachers, content, equipment and technologies interact. In addition to the previous, Nuikkinen (2006: 15) also lists different countable variables, such as lighting, temperature, noise and air quality as one aspect of the physical learning environment. All aspects of the physical learning environment mentioned above are vital in the processes of teaching and learning. Such factors can either improve or diminish the quality of teaching and learning in an environment.

The physical environment plays a major role in our everyday lives. According to Ikonen and Virtanen (2007: 243), physical features create the setting for what can be done in an environment (see also Piispanen 2008: 112). Also Nuikkinen (2006: 14–15) says that the physical environment has an effect on human behavior. At the school-level, it creates the framework for education and it also affects learning methods and its outcome. At its best, the environment creates opportunities and stimuli for learning but in the worst case scenario the environment can restrict behavior and learning. Staffans et al. (2010: 120) state that space creates stimuli and experiences, activates learners' senses and allows them to move, explore and be creative.

It seems that the importance of the physical environment has been taken into consideration in school architecture. By taking a quick glance inside a school one can find specific facilities for teaching different subjects, such as labs for science and even language learning and appropriate space for teaching sports and music, for example. The rule of thumb usually is that the newer the school building, the more versatile the facilities. However, schools also tend to include several classrooms that seem to be very similar to one another even though people and subjects taught in the rooms change constantly. It is also alarming that the architecture of school buildings has not changed much since the first schools were introduced in the antique time: schools usually have a number of classrooms where desks and chairs are placed individually in lines and the

space in the front is reserved for the teacher (Manninen et al. 2007: 59; see also Kuuskorpi 2012: 26–27).

There are several studies that highlight the importance of physical learning environment. When Piispanen (2008) asked 315 Finnish students aged 7 to 12 years what makes a good learning environment, the majority of responses highlighted the physical aspects of the environment. In Toikka's (2015: 60) research 276 students (68 %) mentioned that classroom has an influence on the ideal learning environment for language learning. In their responses students listed comfortable furniture and aesthetic factors, such as colors, cleanliness and lights creating better surroundings for learning languages. In a research by Hämäläinen (2014), 71 Finnish students aged 9 to 12 were asked which place they find the best location for learning. 62 per cent of the respondents chose classroom as the best location instead of home, museum, nature or any other place. According to the results, classroom was a favorite learning environment especially to younger students. In studies like the ones mentioned above, it is natural for adolescents to mention classroom in their responses since it is the place where most of the teaching occurs. Additionally, it can be easier especially for younger students to describe concrete, physical objects in a classroom as opposed to abstract characteristics, such as social atmosphere. Also research methods may affect the research results. Piispanen (2008), for example, collected data with a questionnaire and drawings the respondents had made. Naturally, it is easier to draw physical than abstract items, which may explain the role of the physical learning environment in her research. Nevertheless, the results demonstrate the meaning of physical learning environment and classroom to students in their everyday lives at school; it seems to matter to students what the setting for learning is like.

Even though it is quite easy to grasp the meaning of physical environment on students as an enabling or a prohibitive element of action and the role of the classroom as one of the most important place for learning, it has proven difficult to measure the impact of physical environment to learning outcome. Cleveland (2011: 4) says that there is not much knowledge about the effectiveness of the facilities and their ability to support pedagogy and student engagement (see also OECD n.d.: 6; Manninen et al. 2007: 63). Higgins et al. (2005) state that extremely poor physical elements, such as low ventilation or high noise levels, have a negative impact on students and teachers and the

improvement of such factors has significant benefits. However, when minimum standards are reached, the role of the physical environment is less evident. This is probably due to the multidimensional and somewhat abstract nature of the relation between learning and environment. It is easier to detect heat loss, for example, when designing a new school building but no one knows how to measure "learning-loss". The correlation between the changes in the learning environment and students' attitudes, behaviors and achievements is complex and extremely difficult to measure. However, according to research findings, elements in the classroom that improve comfort and well-being may also improve achievement.

No matter what the physical learning environment is like, the use of facilities essentially comes down to teachers because they decide how the environment is used for teaching. In order to get the full potential of the physical learning environment, teacher needs to have an idea how to use it properly. However, Staffans et al. (2010: 120) say that to some people the physical learning environment may be a given that is being ignored. In order to become aware of the information, one needs to have the ability to understand the role of the environment and skills to work in them. According to Veijola (2000: 7), the physical environment is the same for everyone in the environment but the way a person sees the environment is affected by different factors, such as the observer's age and previous experiences. Hence, also teachers have their own personal relationship to the environment and interpretations of the space and their professional skills as well as their understanding of the learning process plays a role when they enter a classroom and start to teach.

When learning environments are modernized or changed completely to better suit the purposes of the 21st century teaching and learning, teachers need to adapt to the new environment and possibly even change their teaching methods in order to make the most of the new environment. Kollar (2010: 253–254) reminds us that new architectural or artefactual innovations in learning environments can be used in their full potential only when it is clear what learning and teaching processes they support and what educational goals they pursue. In a study by Heikka (2015), 22 teachers and 35 students of a Finnish school were asked their opinions on their new school building with a questionnaire. The results showed that the process of designing a new school building should begin with a pedagogical vision created by the users of the building. If the

process centers only around architects, the new learning environment does not have much effect on the behavior of the people using the facilities. Hence, pedagogical learning environment is deeply intertwined with physical learning environment.

2.3.2 Psychosocial learning environment

As the term implies, the psychosocial learning environment covers both psychological and social aspects of learning environment. Nuikkinen (2006: 14) lists human relations, interaction and school's operational culture as characteristics of social learning environment and students' attitudes and school atmosphere as being part of psychological learning environment. Cognitive and emotional factors of an individual learner are also included in the psychological learning environment according to the Finnish National Core Curriculum for Basic Education (2004: 16). Brotherus et al. (1999) link interaction, communication and cognition in the concept of learning environment. These characteristics can be further categorized under social and psychological learning environments. In addition to human relations and communication, social learning environment can also be observed from a sociological perspective. Ahvenainen et al. (2001: 194) say that since an important goal of education is to integrate children with different social backgrounds, a vital part of the social learning environment in a school is the quality of interaction between students, which is governed, supported and encouraged by the teacher. Additionally, the reputation and socio-economic status of school affects the social learning environment. Unfortunately, the question of status has also started to play a role in Finland where some parents no longer place their children in the closest available school due to the social stigma of the school and its students.

Uusikylä (2006: 11–12) states that teaching includes psychosocial and sociological aspects. Learning occurs in the brain of a student and feelings are closely involved with the process of learning. School affects students' self-image, emotional life and mental health. As a result of education, students build strong images of their capabilities and talent. A good learning environment gives every student a possibility to create both positive and realistic self-image. Though the emotional effects of school education on students can be difficult to measure, emotional changes of students are sometimes more

important than academic achievements as an indicator of students' future. It is easy to agree with Uusikylä when one thinks of the effect of bullying on children, for example. Hamarus (2008: 75–79) says that bullying affects the school community through the lack of security. If learning environment does not feel safe, students do not feel comfortable at school, which can diminish learning. At a personal level, long-lasting bullying causes emotional damage to the victim, which can haunt the person even in the adulthood. Additionally, the bully learns a negative model for social interaction that he may continue to follow throughout his entire life.

When it comes to the psychological and social aspects of language learning, the Finnish National Core Curriculum for Basic Education (2014: 348) states that language learning promotes cognitive development and enables the formation and the appreciation of multilingual and multicultural identities. As students' lexical and grammatical skills develop, techniques for interaction and information seeking also improve. Language teaching should build students' confidence as language learners and speakers of a foreign language. Nowadays the focus in foreign language learning is more connected to the ability to interact and communicate with the target language instead of grammatical and phonological correctness, which also increases the meaning of psychosocial learning environment. Foreign language classroom should be a place where students feel comfortable communicating with the target language despite their limited skills and the possibility of errors. The classroom should provide a supportive, comfortable and peaceful environment for language learning. The role of psychosocial learning environment was also highlighted in a study by Toikka (2015) where 406 Finnish students of different age listed features of an ideal learning environment for foreign language learning. A total of 135 respondents stressed positive team spirit and friendly students creating the best environment. 63 respondents mentioned also that peaceful and quiet environment is important for language learning.

Other studies also underline the meaning of psychosocial aspects in learning. When Mäkelä et al. (2014) asked 43 Finnish children aged 7 to 14 which factors improve learning, safety, peacefulness and ability to socialize were among the most valued characteristics. Piispanen (2008) was also interested in figuring out what makes a good learning environment in the future according to teachers, students and their parents. Based on the results, the parents emphasized the psychosocial aspects of the

environment whereas the students highlighted the physical aspects. Perhaps it is easier for grown-ups to understand the psychosocial factors' effect on childern's minds whereas children focus more on concrete aspects, such as the physical space. In Heikka's (2015) research a group of students and teachers were asked their opinions on their new school building. An overall view among students was that the social learning environment was more important than the physical learning environment when it comes to feeling comfortable at school. Based on Heikka's results, it seemed that people and the nature of action in the school were more important for the students than physical space. Though the results listed here cannot be used to make generalizations about the importance of psychosocial learning environment on Finnish students, they still indicate the need to take it into account in learning environment research.

2.3.3 Pedagogical learning environment

Silander and Ryymin (2012: 49) say that pedagogical learning environment includes all the pedagogical approaches and practices used in teaching. According to Manninen et al. (2007: 108) the pedagogical view is crucial for the concept of learning environment because it creates learning. A classroom loses its role as a learning environment if all the elements that support learning, such as learning materials, blackboards, a teacher and especially learning processes and goals, are removed from it. Piispanen (2008: 158) states that the pedagogical learning environment consists of physical, psychological and social aspects but focuses mostly on teacher and his or her educational behavior. In other words, it can be said that the pedagogical learning environment consists of the pedagogy applied by the teacher in the environment.

It is clear that the role of the teacher is vital as the creator of pedagogical learning environment. When we talk about pedagogical learning environment, the focus is on teachers' understanding on the process of learning and the teaching methods they choose to use. A question for teachers to consider is how to create stimuli that support learning in the best possible way. This is closely related to teachers' creativity and the use of the environment and available resources for teaching purposes. (Manninen 2007: 108–109.) When teachers create pedagogical learning environment, national and school

level curricula dictate and guide teachers in their work to a certain point but the execution of teaching is based on teachers' own beliefs and professional skills.

When the focus is on language learning, Huttunen (2000: 86–88) states that learning environment refers to the circumstances where language competence and learning develop. Because the teacher creates the conditions for learning at school, his or her views on language competence and the process of learning naturally dictate the nature of learning environment. Instead of pedagogical learning environment, Huttunen talks about the mental stage of learning environment which refers to the way a teacher understands the world. The understanding is further related to teacher's perceptions of the nature of language learning and language use. The mental stage can be defined by observing which aspects get the most attention in learning, what type of models for language use and language learning the teacher gives to the students and what possibilities there are available for students for practicing language use. One way of describing different learning environments in language education is to make a distinction between language-centered and meaning-centered learning environments. In language-centered learning environments the focus of teaching is on language and linguistics whereas meaning-centered learning environment focuses on meaning and how to produce and process verbally and socially correct messages.

According to Manninen et al. (2007: 109), the pedagogical approach chosen for the basis of learning environment defines the nature, structure and processes of learning environment. In the matter of language education, Huttunen (2000) says that the Common European Framework of References has developed a new holistic approach to language learning and teaching that sees language as a tool for thinking, self-expression and communication. Important aspects of the approach are communication skills and learning how to learn languages. When the focus of language learning changes, teachers should also consider the changes that are required in the learning environment in order to gain the new goals. This, however, seems to be difficult in practice. Pöyhönen (2010) states that current curricula for language education highlight the goals of communicative approach but research shows that teachers still emphasize the linguistic knowledge of language as opposed to enhancing students' skills to use language as a tool for communication. The majority of language teachers still find textbooks the most important teaching material, teaching is usually quite teacher-centered and material

produced by students is based on individual or pair work. Moreover, the level of cooperation between language teachers is low, integration of other subjects with language education is minimal and teaching occurs most often in a classroom. Therefore, based on Pöyhönen, it seems that pedagogical learning environments at schools are still somewhat language-centered as opposed to meaning-centered though differences between schools and teachers exist.

One reason for the problem could be the lack of in-service training among teachers. Pedagogical training in Finland for student teachers is extensive and mandatory. Additionally, all teachers in general education are required a Master's degree. However, when student teachers graduate and begin working at school, the amount of training decreases drastically. Mikkola and Välijärvi (2014: 58) say that it is essential to take care of teachers' professional development in order to maintain and secure high quality of teaching. Though the quality of teacher training in Finland is high at the university-level, practicing teachers are too much responsible for upholding and developing their professional skills. As the finances of municipalities become tighter, the willingness and possibilities to support their educational employees' professional development decreases. If teachers were offered more training on constructivism and communicative language teaching, perhaps this would improve pedagogical learning environment.

3 MODERN LEARNING THEORIES

Learning in schools does not happen by chance. Teachers carefully consider and plan for what students should learn in each lesson or a certain period of time. An understanding of the ways in which we believe people learn is essential for teachers and all of those who are responsible for planning and implementing the lessons.

As the time and the world change, so do the conceptions of learning. A few decades ago, during the 1970s and 1980s, behavioral theories gave way to cognitive theories that focused on mental processes and understanding of complex material. These theories emphasized that learning occurred from the inside out rather than from the outside in. Then, especially during the later 1980s and the 1990s, cognitive theories developed towards approaches that emphasized the social nature of the learning process and the

active construction of knowledge in a wide and modern learning environment (Pritchard 2009). Modern theories of learning see learning as a process that aims to understand reality. The main focus is in the interaction between the learner and the phenomenon or the subject of learning. In other words, learning is seen as an active, not passive, process, where knowledge is constructed, not acquired (Pritchard and Woollard 2010; Weimer 2013).

According to Shuell (2013), different learning theories require different classrooms:

> If one believes, for example, that knowledge is something created afresh by each student, that learning occurs from working on authentic tasks in a social environment, and that the mental activities of the student determines what he or she learns, then the resulting classroom is likely to be one in which students work in groups and/or on projects, discussing how to solve a problem, or negotiating the meaning of a concept. (Shuell 2013)

The quote above is a good example of a constructivist classroom and could easily be an excerpt from the Finnish curricula. This is the kind of classroom that should be found in today's schools according to the renewed Finnish National Core Curriculum for Basic Education and the renewed Finnish National Core Curriculum for Upper Secondary Schools. Both curricula highlight the active role of students in the learning process. For example, the renewed Finnish National Core Curriculum for Upper Secondary Schools says that students interpret, analyze and re-evaluate information, build up new information and deepen their skills based on their previous experiences and knowledge. Students learn to set goals and solve problems independently as well as with peers. In addition, both curricula see that learning happens in interaction with other students, teachers and/or other experts in different learning environments. This demonstrates that constructivism is evident in current educational change. (Perusopetuksen opetussuunnitelman perusteet 2014, Lukion opetussuunnitelman perusteet 2015.)

The classrooms in schools today should give more opportunities to information gathering and enable interaction with peers. The development of modern learning environments challenges traditional education by giving a high priority to cooperation, student-centeredness and information sharing. The roles of both the student and the teacher are changing which should also be reflected in the classrooms. According to Manninen et al. (2007: 109) nowadays it is common to follow the principles of constructivist learning theories, when designing new pedagogical learning

environments but the execution may remain incomplete thus having insufficient purpose in practice.

3.1 Cognitive constructivism and social constructivism

There are two considerable types of constructivist approaches to learning and teaching: Piaget's theory of cognitive constructivism and social constructivism based on Vygotsky's theory. Piaget's main focus falls upon the individual and how the individual constructs knowledge. Piaget's theory of cognitive development claims that people cannot be given information which they are able to immediately understand and use. Instead, people need to actively construct their own knowledge and understanding. (Powell & Kalina 2009, Pritchard 2009:33, Pritchard & Woollard 2010: 47.) This theoretical framework holds that learning occurs when new information is built into and added onto the learner's current structure of knowledge and skills (Pritchard 2009, Naylor & Keogh 1999).

Social constructivism was formed after Piaget had described his theories involving cognitive constructivism. The two theories share the same view about knowledge construction but Vygotsky, the founder of social constructivism, also believed in social interaction and that people around the learner have an integral part in learning (Powell & Kalina 2009, Pritchard & Woollard 2010). Pritchard and Woollard state:

> From Vygotsky's work we see that there are three major pointers towards our understanding of the process involved in learning in the terms of social constructivist domain. They are that: the people around the learner have a central role in learning; the people around the learner influence, sometimes deeply, how the learner sees the world; and certain tools affect the way in which learning and intellectual development progresses. These tools can vary in type and quality and include culture, language and other people. (Pritchard and Woollard 2010: 35)

An obvious socially constructive approach to learning is working collaboratively in pairs or small groups. Cooperation and collaboration enables sharing and developing ideas. Pritchard (2009) explains that dialogue with others allows different perspectives to be taken into account, which a learner can consider when developing personal conclusions of the subject at hand. As a group, students represent a wide range of opinions, abilities and strengths. Different knowledge, points of view, and understanding can be considered and discussed before moving on. Traditionally thinking, the dialogue

happens often between the learner and a more knowledgeable other, (in other words the teacher), but it does not need to always be the case. Pritchard (2009) states that dialogue with other learners can be of equal value. Social constructivism is a highly effective method of teaching that all students can benefit from, since collaboration and social interaction are incorporated.

3.2 Constructivist teaching methods

As became evident in the previous chapter, constructivist methods emphasize that learning occurs when learners are actively involved in a process of meaning and knowledge construction as opposed to passively receiving information transferred to them from teachers and textbooks (Stage et al. 1998: 35). Pritchard and Woollard (2010: 48) state: "In the constructivist classroom, the learners are the makers of meaning and knowledge. Learners are not empty vessels into which knowledge and wisdom is poured." This is, therefore, contrary to the traditional classroom where students work individually, learning is achieved through repetition, and subjects are strictly adhered to and are guided by a textbook.

A wide variety of teaching methods is based on constructivist learning theory, for example, modelling (showing students how to do or think about a difficult task), scaffolding (providing support which is gradually withdrawn), coaching (helping students to solve a problem), reflection (creating tasks where students can reflect on what they have learnt), collaboration (with other students), exploration, problem-solving activities and getting students to express and discuss about their ideas. Teachers should lead students to construct meaning by creating learning situations around big ideas and giving the students enough time to explore concepts around the subject. Learning should involve activities to process the new material, linking it to what the student already knows. Tasks should be authentic, set in a meaningful context, and relate to the real world. (Muijs & Reynolds, 2011: 88). One of the primary goals of using constructivist teaching methods is that students learn to take responsibility for their own learning process. This occurs when learners are actively involved and the activities are student-centered. Furthermore, students are encouraged to work in groups and learning is interactive. Constructivist teaching fosters critical thinking and creates motivated and independent learners (Pritchard and Woollard, 2010: 48).

Connecting constructivist teaching methods to language learning might be more difficult comparing to subjects such as science and mathematics. The focus in language learning, at least in basic education, is on gaining new vocabulary that happens mainly by memorizing the words and learning important grammatical structures. However, it is possible to use functional teaching methods (eg. singing and playing games) also with smaller children to support memorization. Later on, when basic language skills have been acquired, it is easier to take advantage of a larger number of constructivist learning methods in the language classroom. These methods could be, for example, learning by teaching, cooperative work and learning by preparing various projects. In a constructivist language classroom students are able to work in groups and learning is interactive and dynamic. There is a great focus and emphasis on social and communications skills, as well as collaboration and exchange of ideas, to which the modern language classroom naturally guides.

Constructivism focuses on learning instead of teaching; the student instead of the teacher; and constructing personal knowledge instead of studying pre-digested information. It can be noted that constructivist teaching methods emphasize the student's role but it does not mean, however, that the role of the teacher or the value of expert knowledge are dismissed. Constructivism modifies these roles, so that teachers help students to construct knowledge rather than reproduce a series of facts. Teacher is still the expert whose main responsibility is to help the learners to learn by creating a suitable learning environment where learning is possible. (Brooks & Brooks 1999). The two main characteristics of constructivist teaching are the active role of the learner and the changed role of the teacher. Next we are going to view the roles of the student and the teacher.

3.2.1 The student's role in the learning process

Think for a moment of a typical classroom. Who is talking? Who leads the discussions? Who decides about and brings in the material? Who asks and then answers most of the questions? Who solves the problems? Most of us would answer – the teacher. What happens if, on the contrary, it were the students who would do all of these things? When students talk and discuss about subjects; decide what kind of material they want to work

with; ask questions and come up with different solutions and solve problems together – it is learning that happens (Pritchard & Woollard 2010).

A constructivist classroom is a student-centered classroom where learning is active. Active learning means students engage with the learning material, participate in the class, and collaborate with each other. The student-centered approach to learning has been emphasized in Finnish schools in recent years (Perusopetuksen opetussuunnitelman perusteet 2014; Lukion opetussuunnitelman perusteet 2015). The traditional way of teaching – where, in fact, the focus is on teaching instead of learning – leads to students' being passive learners, which does not support or enhance learning in any way. Research shows that in traditional classrooms many students fail to engage with the provided learning material. Instead, students often memorize material for which they may not fully understand. Therefore, as time passes, they often do not remember material they studied earlier. (Blumberg: 2012.). Of course, teaching can also be non-traditional in a traditional classroom, but in many cases, having a traditional classroom may lead to traditional teaching. Brooks and Brooks (1999) state that students learn more through experiences and active involvement than by observing. A constructivist student-centered approach places more focus on students' learning than on teachers' teaching. In student-centered classrooms, students are directly involved in the discovery of their own knowledge and autonomy in learning is encouraged (Young & Paterson 2007: 5). Jones (2007) states that student-centered learning strives for developing learner autonomy and independence by putting the responsibility for learning in the hands of students. Pritchard and Woollard (2010) confirm this by pointing out that learning has to be an active process on behalf of the learner so that actual learning can take place.

The student-centered approach includes such techniques as establishing active learning experiences for lessons, assigning open-ended problems and tasks that require critical or creative thinking, involving students in simulations and role plays, and using cooperative learning (Weimer 2013; Collins & O'Brien 2003). Through collaboration and cooperation with others, students engage in experiential learning that is authentic and challenging, which again, increases the meaningfulness of learning. Collaborative work allows for classrooms to be more cooperative than competitive. In a cooperative classroom, students are free to ask questions and express their own ideas about a

subject not only to their teacher but also their peers. If students are fearful of making a mistake or scared of being wrong, they are less likely to push themselves to their learning limit and more likely to stay within what is comfortable and known. If students are supposed to construct their own knowledge about their learning, we need learning environments where students can think out loud, collaborate on a regular basis, and make mistakes without fear of being ridiculed by anyone. (Nash 2014; 3.) According to Collins and O'Brien (2003) properly implemented student-centered approach can lead to increased motivation to learn, greater retention of knowledge, deeper understanding, and more positive attitudes towards the subject being taught. Young and Paterson (2007:5) continue that student-centered teaching focuses on skills and practices that enable independent problem-solving and lifelong learning.

In conclusion, constructivist approaches to learning and teaching emphasize the student's role by placing him/her in the center of the learning situation. Constructivist classroom environments put students' interests first and are focused on each student's needs, abilities and learning styles. This inevitably changes the traditional role of the teacher, as well, because lecturing in front of the classroom does not support modern learning theories.

3.2.2 The teacher's role in the classroom

There is one major similarity in social and cognitive constructivist theories; the way constructivist classrooms should be run. Both Piaget and Vygotsky agree that the teacher's role should be a facilitator and guide, and not a director or dictator (Powell and Kalina 2009). Student-centered teaching shifts the role of the teacher from givers of information to facilitators of student learning. Students need to be active participants in their own learning, and the teacher facilitates the learning process by consulting and supporting the students (Nash 2014; 2). Thus, the teacher's main focus should be on guiding students by asking questions that will lead them to develop their own conclusions on the subject. The teacher becomes a participant and a co-learner in discussion, asking questions and perhaps correcting misconceptions, but not telling learners what they need to know. In student-centered teaching, the teacher focuses on what students are learning, how they are learning, and how they can use the learning (Weimer, 2013). This challenges teachers for they cannot assume that all students

understand things in the same way. Furthermore, students may need different experiences to advance to different levels of understanding. Each student has a unique way of learning, so the teachers who consistently present the same material to all students simultaneously do not consider or appreciate students' individual way and pace of learning (Brooks and Brooks, 1999). Pritchard and Woollard (2010: 48) have compiled a list on how teachers can enhance students' learning process. According to them, teachers should:

- tell the learners why they are learning;

- provide opportunities to make the learner feel in control;

- provide opportunities for active engagement (cognitive, kinesthetic and social);

- plan to use the learners' previous experiences;

- plan to structure the learning experience based upon understanding of the curriculum;

- engage with the learners through dialogue and questioning;

- be sensitive to the emotional aspects of learning experiences;

- contextualize the activities with real-life examples.

Students need to know what they are learning and why they are learning the content and they need to be actively engaged in their learning (Pitler & Stone, 2012: viii). Student-centered teaching maintains an appropriate balance of power between the instructor and the students by giving the students opportunities to learn and some control over expressing perspectives and their methods of learning and assessment. The role of the teacher focuses on helping students to learn through discussions and questioning. Teachers should not just pass information. Instead, they should create an environment in which students can use their previous experiences and build-up new ones. The teaching and learning methods that instructors use should be appropriate for students' learning goals. (Blumberg, 2012.) Brooks and Brooks (1999) have also drawn up, perhaps a slightly more detailed, list of suggestions for teaching based on the constructivist learning theory. According to them, a constructivist teacher puts students in situations that might challenge their previous conceptions and that will create contradictions that will encourage discussion. Additionally, the teacher searches out

students' understanding and prior experiences about a concept before teaching it to them; provides enough time for students to construct their own meaning when learning something new and furthermore, encourages student autonomy.

To instruct students who learn in different ways, teachers need a repertoire of teaching strategies that respond to different learning styles and approaches. At least, teachers should know how they can make appropriate adaptations for students concerning time, the size or difficulty of tasks, the kinds of assistance offered, the way input is offered (auditory, visual, and so forth), and the kind of output required (how students demonstrate what they have learnt) (Darling-Hammond and Baratz-Snowden, 2005: 22). Teachers' expertise enables them to select appropriate tasks, guide the learning process, and maintain students' motivation to learn (Darling-Hammond and Baratz-Snowden, 2005: 9-10). Teachers' challenge nowadays is to give appropriate tools for thinking and learning rather than static transfer of knowledge from oneself or from a textbook to the learner.

According to Blumberg (2012), teachers should assist their students to take responsibility for their own learning by creating learning situations that motivate students to accept this responsibility. Further, teachers should guide students to acquire skills that will help them learn in the future. When students assume responsibility for their own learning, they become self-directed, lifelong learners who are aware of their own abilities to learn. Teachers are required to act as a model of life-long learning.

Students should be active participants in their own learning, and the teacher facilitates the process by consulting and supporting the students (Nash 2014: 2). This view sets challenges and pressure for change considering, for example, current learning environments and the role of teachers in the learning process. As a result, traditional teaching has come to a turning point (Kalliala & Toikkanen 2009: 9–10). In the future, the learning process should have a more cooperative nature that, however, appreciates students' individuality. Instead of teaching information, teachers should pay attention to the learner's abilities to search and gain information and adapt what is learnt in new situations. Students also need support in learning how to discuss and how to collaborate (Pritchard 2009: 108). At best, new educational solutions offer both teachers and

learners the opportunity to choose the learning environment and material, so that they can reach their individual goals (Meisalo et al 2000, 66–67).

3.3 The difficulty of changing the teaching habits

Today, some teachers continue using the traditional, analytic teaching methods. Traditional teaching is concerned with the teacher being the controller of the learning environment where student thinking is devalued. According to Brooks and Brooks (1999: 7): "When asking students questions, most teachers seek not to enable students to think through intricate issues, but to discover whether students know the "right" answers. Consequently, students quickly learn not to raise their hands in response to a teacher's question unless they are confident they already know the sought-after response." Traditional learning is largely based on memorizing facts, which does not provide students with valuable skills or even with a body of knowledge that lasts much beyond the end of the school year. Also, most teachers still rely heavily on textbooks and lecturing. Since knowledge cannot be transmitted, instruction should consist of experiences that facilitate knowledge construction (Brooks and Brooks, 1999). The traditional view of learning implies that teachers' role is to communicate knowledge in a clear and structured way, to explain correct solutions, to give students clear and resolvable problems, and to ensure the tranquility of the classroom. In contrast, a constructivist view focuses on students as active participants in the process of gaining knowledge. Teachers holding this view emphasize facilitating student exploration, prefer to give students the chance to develop solutions to problems on their own, and allow students to play an active role in instructional activities. (OECD TALIS 2011).

According to the OECD's Teaching and Learning International Survey (TALIS) (2011), constructivist teaching is highly valued in schools and among teachers and traditional teaching is not considered to be good anymore. However, OECD's studies have shown that traditional methods still exist in teachers' practices. Teachers' views about teaching are indeed constructivist but the teaching methods they use are still very traditional. In the classroom, teachers put greater emphasis on ensuring that learning is well structured than on student-oriented activities which give them more autonomy (OECD TALIS 2011: 88). Brooks and Brooks (1999) agree that some teachers still resist

constructivist pedagogy. According to them, the teachers usually do so for one of three reasons. Firstly, commitment to their present instructional methods is strong and teachers feel that it is difficult to tear down and rebuild them. Secondly, teachers have concerns about student learning and resist changing anything because students already get good grades. Thirdly, teachers concern about classroom control and assume that constructivist classrooms are noisier. (Brooks & Brooks, 1999: 101-102). Hence, it can be difficult for teachers who have been working for many years to change their well-established teaching practices. Student teachers, on the other hand, get to be engaged in modern learning theories from the beginning of their teacher studies. One might assume that they adopt the new theories during their studies and apply them when entering the working life. However, a study by Jalkanen et al. (2012b) highlights that student teachers' mindset about learning and teaching is, unfortunately, still very traditional. The student teachers feel that they are not supported enough in teacher education to become competent promoters of modern pedagogical methods. The study reveals that student teachers repeat the practices they have acquired during their studies.

Simola (1998) states that teaching and learning in schools are characterized by continuity rather than change. He continues by saying that the traditional teacher-focused teaching model has proven to be phenomenally strong. The educational practices of the traditional classroom are no longer effective and teachers must develop new teaching strategies that are radically different from those employed in the traditional classrooms. It has been found that invariable space, furniture and equipment solutions do not provide teachers and students with opportunities to take advantage of new learning and teaching methods (Kuuskorpi 2012: 3). Traditional classrooms, which we mainly still have in our schools, may direct teachers to teach more traditionally but with new classroom designs, we can seek to change teachers' teaching practices and to move away from the traditional model.

So far, we have covered the theoretical framework of our study by explaining the history and the concept of learning environment theory with a focus on pedagogical, psycho-social and physical learning environments. We have also presented the importance of constructivism in today's education as well as its impact on language learning and teaching. Next, we will shift focus from theory to practice and move on to discuss the present study, its implementation and results.

4. THE PRESENT STUDY

4.1 Research questions

The idea for this research came during our teacher training in 2013–2014 when a language classroom was renovated in the school where we were practicing teaching and we got to use the new classroom for teaching. Earlier, a science classroom had also been renovated in the school and because of the school's eagerness to modernize their facilities, we became interested in the possibilities classroom renovations might bring to teaching and learning. As mentioned in Chapter two, the interest in learning environment has grown enormously in Finland in the 21st century. This has led to the design of new learning environments both inside and outside of school settings, which, gives reason to study the additional value the new environments may bring. At the moment, the amount of research on the possible outcomes of new learning environments in Finland is minimal. Therefore, we saw it as an important topic of research and wanted to find out if the modernization of learning environments is actually worthwhile.

With this research, we are hoping to find answers to the following research questions:

> 1. How does a modernized language classroom compare to a traditional classroom based on its physical, psychosocial and pedagogical features from the students' point of view?
> 2. Does the modernized language classroom bring additional or new possibilities and increase the application of constructivism in language learning and teaching?
> 3. What is the overall opinion on the modernized classroom according to teachers and students?

Based on our teaching experiences in the modernized classroom, we were somewhat doubtful about the potential of the room. Our hypothesis was that the modernization of the classroom would not make much difference in pedagogy or students' perceptions of the space. We believed that the modernized classroom would not be different enough from a traditional classroom in order to change the pedagogy somehow. Furthermore, we were skeptical about the teachers' ability to see the possibilities the renovated

facilities may bring to teaching and learning English. Despite our negative presumptions, we were hoping to be proved wrong during the research.

The research was executed as a survey study. In social sciences, surveys are used for collecting information about the characteristics, attitudes or actions of people by asking them questions. Surveys are not usually interested in individual responses but seek to make generalizations about groups of people or entire populations. Social surveys can be further categorized in two groups based on their objectives. Atheoretical descriptive surveys tend to focus on finding facts about a phenomenon without paying much attention to the reasons for the results. Analytical surveys, on the other hand, are inspired by theoretical questions and hypotheses about people's behavior or attitudes. Comparing groups' answers against another is also typical for analytical surveys. In practice, however, both descriptive and analytical features are usually present in survey research. (Buckingham & Saunders, 2004: 12–14.)

This study included both descriptive and analytical elements. As it can be seen from the wording of our research questions, we were more interested in finding facts and 'yes or no' type of answers to our research questions though the reasons for our findings will also be speculated in chapters 5 and 6 based on the results. Hence, our study can be called descriptive. The use of learning environment approach and the theory of constructivism in questionnaire design, however, made the study analytical. Moreover, our research included a hypothesis, which is typical for analytical survey studies.

As mentioned earlier, analytical surveys usually include comparison of some sort. The aim of comparative research is to compare phenomena related to human behavior or nature in different places or time. The goal is to better understand the similarities and differences of the topic in question between two or more samples. (Vilkka, 2007: 21.) Based on the wording of our research questions, it is obvious that our research was highly comparative as we compared students' perceptions of the modernized language classroom to a more traditional classroom and the differences between students' and teachers' opinions on the modernized classroom. Due to the element of comparison, the student questionnaire was answered by two groups of students, one of which had their English lessons in the modernized classroom at that time and the other group in a more traditional classroom. We wanted to find out students' perceptions of the two different

EFL classrooms and compare the results in order to see if the modernization had an impact on students' overall opinion about the learning environment. We also wanted to compare the results of students' and teachers' responses to see if there was a consensus between their opinions about the modernized classroom. Moreover, we were hoping to find more detailed explanation to the research results from the teacher responses.

Survey studies, in general, have numerous positive features, such as cost efficiency and ability to represent a wide target population, make generalizations and either support or refute hypotheses about the target population, just to name a few. The downside of survey studies is its limited potential to find explanations or fine details. (Cohen et al. 2013: 256.) However, due to the nature of our research questions, the use of surveys as a research methodology was appropriate since we were hoping to find 'yes or no' answers to our questions. Another goal of the research was to make generalizations of the students' perceptions to cover the entire student population of the school.

4.2 Background information of the modernized classroom

The target of this study was a classroom that was recently renovated and modernized for language learning purposes. The classroom is located in Central Finland in a school that provides basic and secondary education. The target school is a part of University of Jyväskylä's Faculty of Education. Therefore, the school is in charge of organizing supervised teaching practice, as well as research, experimental and development activities and continuing education for teachers. Due to the school's close connection to the university and its academic background, the school is somewhat different from a typical Finnish school. For example, the school is funded by the university instead of a local municipality where Finnish schools normally get their funding.

According to Kähkönen and Pollari (2015), the idea for renovating the classroom came in the beginning of 2012 when one of the language teachers of the school visited an exhibition in London with the school principal and got ideas for modernizing one of their language classrooms. At that time, a science classroom had already been modernized with positive results, which increased the interest in remodeling other classrooms, as well. In the spring of 2013, two language teachers sent an application for

financial support to the Ministry of Education for executing the renovation project in the school but the application was denied. In the fall of 2013, the school board noticed that it was possible to fund the project from the school budget. However, the project had to be carried out in a tight schedule within that year for budgetary reasons.

With the renovation, the teachers wanted to create a space for language learning where students could study in different ways according to their interests and pace of learning. The teachers also hoped that the new learning environment would enable students to collaborate more during language classes and decrease the role of the teacher as a leader in the classroom thus increasing students' responsibility of their own learning. All the ideas mentioned by Pollari and Kähkönen support constructivist learning theories mentioned in chapter three.

The biggest changes in the classroom concerned the furniture and seating arrangements. Old desks and chairs were replaced with different shaped desks and chairs on wheels that were easy to move around. Additionally, different areas for studying and sitting were created with the use of couches and higher tables with bar stools. With the help of new colorful furniture the aesthetics of the classroom also changed. The amount of ICT was increased with wireless headphones and three digital whiteboards placed on different sides of the classroom. However, there were a lot of technical problems with the equipment for several semesters after the renovation due to the lack of technical expertise. Figures 3 and 4 present the modernized classroom. As a comparison, figures 5 and 6 represent a more traditional classroom that has not been remodeled in any way. The students who took part in the survey answered the questionnaire based on these two classrooms. For the purpose of our study, the modernized classroom will be called Classroom M and the traditional classroom will be called Classroom T. The design of the student survey will be discussed in more detail in chapter 4.3.1.

Figure 3. The modernized language classroom. (Classroom M)

Figure 4. The back of the modernized language classroom. (Classroom M)

Figure 5. The traditional classroom. (Classroom T)

Figure 6. The traditional classroom. (Classroom T)

4.3 Collecting data for the present study

As mentioned earlier, both students and teachers took part in the survey. We found it important to include teachers as well as students in the study as they use the facilities the most. The groups, however, have very different approaches for evaluating school premises due to their differences in age, mental growth and purposes of using the classroom, among other things, which is why it was not only interesting but also important to hear both parties in the matter. Fraser (1998: 528) states that asking both students and teachers to evaluate a classroom has the dual advantage of defining the learning environment through the eyes of the participants themselves and of finding data that an external observer could miss or consider unimportant.

Since the questionnaire for students differed from teachers' questionnaire in structure and administration, we will next explain the process of data collection from students and teachers separately.

4.3.1 Data collection from students

According to Dörnyei (2007: 101), there are two key aspects concerning the methodology of survey research: how to sample the participants and how to design and administer the research tool, the questionnaire. In the matter of sampling the participants, the main issues concern the size and the qualities of the people among the sample. There were two different groups of students who participated in the student questionnaire. One group of students was asked to answer a multiple-choice questionnaire based on their perceptions of Classroom M (see figures 3 and 4), whereas another group of students got to answer the same questionnaire based on their perceptions of Classroom T (see figures 5 and 6). When it comes to the size of the sample, as a rule of thumb, Dörnyei (2007: 99) gives a range of one to ten per cent of the population with a minimum of 100 participants. All in all, 81 students took part in our survey in Classroom A and 102 students participated in the survey in Classroom B. Due to the school schedule, we were not able to get more student participants in the survey. However, there were approximately 600 students in the school, which means that the survey covered approximately 30 per cent of the school population.

In addition to the sampling, another key aspect in survey research is the design and administration of the questionnaire. The student questionnaire in our research focused heavily on finding answers to the first research question. According to Vehkalahti (2008: 20–21), when designing questionnaires, it is essential to make sure that the right questions are asked in a statistically relevant way. A researcher should first conceive the key dimensions of the phenomenon in question by getting to know the theory and use the dimensions for designing the questionnaire. Valli (2010: 104) continues that researchers are usually interested in phenomena that are not easily measured thus making it difficult to find existing instruments for measuring the phenomenon. In that case, the concepts describing the phenomenon have to be converted into measurable form, which can be done by exploring the theory behind the phenomenon.

The student questionnaire was designed by focusing on the learning environment approach and the physical, psychosocial and pedagogical views of learning environments covered in chapter two. The questionnaire had five different sections. The first three sections included statements about the physical (section 1: statements 1–9), psychosocial (section 2: statements 10–15) and pedagogical (section 3: statements 16–26) characteristics of the classroom. The students were asked to agree or disagree with the statements on a five-scale Likert scale (1 = strongly disagree, 2 = somewhat disagree, 3 = somewhat agree, 4 = strongly agree, 5 = neither agree nor disagree). The statements were all positively charged, which would later help us in data analysis. Due to physical differences between the classrooms, the questionnaire for Classroom M included two additional statements (25 and 26) concerning the use of the furniture and ICT in the classroom. In the fourth section of the questionnaire the students got to agree or disagree with statements about the role of classroom when learning English. Finally, the students got to rate their classroom and write down what they thought a good classroom for learning English would be like. Before data collection the questionnaire was piloted by two adult people and evaluated by a statistician. Some stylistic changes were made in the questionnaire in order to make the statistical analysis of the responses easier later on. The questionnaire for Classroom M can be found in Appendix 1. The questionnaire for Classroom T was the same without statements 25 and 26.

Valli (2010: 105–106) mentions that the length and the language should be considered carefully when designing a questionnaire (see also Vehkalahti 2008: 48). In our

research, the young age of the respondents was taken into consideration by keeping the length of the questionnaire somewhat short and using simple language in the statements. Having two groups of students in different classrooms answering the questionnaire enabled us to use more simple language in the questionnaire. We could have conducted the survey simply by asking one group of students to compare the characteristics of the modernized classroom to other classrooms. Hence, a statement such as *This classroom is modern* would have changed into *This classroom is more modern than other classrooms*. This, however, would have required us to use more complicated language in the questionnaire, which might have affected the students' motivation and ability to answer the questions. This type of wording might have also lead students to answer the questionnaire in favor of the modernized classroom. Additionally, it would have been difficult for the students to compare the classroom to other classrooms that also differ from one another. Thus, students' interpretations of the statements would have differed from their peers' interpretations, which would have lowered the reliability of the questionnaire.

Before data gathering, the student questionnaire was reviewed by a statistician and piloted by three adult people. With the help of the statistician, the number of statements was reduced and the statements were unified in a way that they were all 'positively charged'. Hence, if a student agreed with a statement, it always implied that the classroom was somehow good. The comparison of the results and the statistical analyses based on the results became easier when all statements measured the goodness of a classroom instead of including both negative and positive statements about the classroom. Furthermore, based on the feedback received after piloting, the possibility of choosing gender 'other' instead of male and female in the questionnaire was erased for clarity reasons.

The data was gathered from students in February 2016. Earlier, a permission to conduct the research in the school was asked from the Head Principal. Because the majority of students participating in the research were underage, a parental permit for participation was also confirmed. The majority of students who were learning English at that time either in Classroom M or Classroom T took part in the survey. As mentioned earlier, from a total of 183 students 81 students (44 %) answered the questionnaire based on their perceptions of Classroom M and 102 students (56 %) based on their perceptions of

Classroom T. 96 students participating in the questionnaire were studying at the 7th, 8th and 9th grades of the Finnish basic education system whereas 91 students were studying at high school. Since the respondents' grade was asked in the questionnaire instead of age, we can only assume that the respondents were approximately 13–18 years old based on their grade.

The students got to answer the questionnaire electronically by using iPads, which made participation in the survey more appealing to the students and helped the process of data gathering enormously. An online survey software called Webropol was used for data gathering. A researcher was always present when students answered the questionnaire. According to Valli (2010: 108), the participation ratio becomes higher and the costs of data gathering are lower when data is gathered simultaneously from a large group of people in the presence of the researcher. Also, the researcher can observe the respondents and answer their questions about the questionnaire if necessary. All the advantages of data gathering in the presence of a researcher mentioned by Valli proved to be true in our case. We were able to give instructions for answering the questionnaire to the students, help them in times of trouble and thank them in person for participating in our research. All this enabled us to get a high level of participants in the survey.

4.3.2 Data collection from teachers

One of the aims of the present study was to examine the relation between language teaching and learning environment. We were hoping to find out whether the modernized classroom brings additional value into teaching and whether it actually matters what the learning environment is like in terms of language learning and teaching. Bearing these in mind, it was fairly easy to choose teachers as respondents on this part of the study. There were two criteria for selecting suitable teacher respondents for the research. The participants had to be English teachers and they had to be familiar with the classroom by having used it for teaching English during the present school year. As mentioned before, the group of teachers who participated in this study was much smaller than the group of students. Alanen (2011: 148) notes that collecting data from a small group of participants with open-ended questions can result in more in-depth information than for example from statistical data. By collecting data from the teachers,

we were hoping to get additional information about the teachers' opinions, feelings and experiences towards the modernized language classroom. Therefore this part of the study can be described as qualitative.

The most common data collection methods of qualitative research are interview, questionnaire, observation and knowledge based on different documents (Tuomi and Sarajärvi 2009: 71). We ended up with an open-ended questionnaire and not e.g. a person-to-person interview because it would have been challenging and time-consuming for the teachers to arrange suitable times for everyone and finally carrying out the interviews. Due to very busy and different schedules of the teachers, a questionnaire was considered to be more practical a tool for data gathering instead of a group interview, for example. Dörnyei (2010) mentions easiness as one of the benefits of using open-ended questionnaires as opposed to face-to-face interviews. Dörnyei continues elaborating the benefits of open-ended questions by saying that the respondents can answer in their own words and express their thoughts and opinions freely. This way it is also possible to get more information than expected. The disadvantages are that the researcher cannot be sure how seriously the respondents answer the questions and that the answers might be short and sometimes vague because the researcher cannot ask any clarifying questions (see also Hirsjärvi et al. 2009: 195). We believed that the theme of the present study for the respondent teachers was interesting due to its relevance to their work. This study focused on a specific classroom where the respondents had been teaching. Hence, we assumed that this would be a good motivator for the teachers to take the questionnaire seriously.

The questionnaire consisted of twelve open-ended questions that focused on teachers' views and opinions about the modernized classroom as well as on what they thought was important in language learning, teaching and language classrooms in general. These questions were created in order to get answers to our second and third research questions. Alanen (2011: 149) emphasizes that it is important to remember that every question must be related to the research questions in some way. The questionnaire was piloted before sending it to the respondents. We asked one English teacher from the target school to go through the questions and give us feedback on their relevance and clarity. Considering the feedback given to us, one question was removed from the questionnaire, due to a very similar question, and a few little changes in wording was

made into one of the questions. The questionnaire for teachers can be seen in appendix 2.

The questionnaire was created into an online survey software called Webropol. This was done in order to make the answering as effortless as possible, which we hoped would increase the number of participants. This way the teachers were also capable of answering the questions anonymously, which we considered to be important. Since the renovation of the classroom was done by two members of the staff, we wanted to enable the respondents to express their true opinions of the matter without the fear of disapproval from their colleagues. Privacy assurances were made to each individual who received the link to the questionnaire, namely that the information would be kept strictly confidential and responses to the survey would be anonymous. We did not ask any personal information, except a rough estimate of the number of years worked as a teacher, which increased the level of anonymity as well. As mentioned by Kuula (2006), confidentiality and anonymity should be kept in mind when gathering and processing data. The link to the online questionnaire was sent to six English teachers in December 2015 via e-mail, which also included a brief description of what we were studying. Four of the six teachers responded to the questionnaire. All respondent teachers were working in the target school as foreign language teachers during the current academic year and their working experience ranged from less than a year to over a decade.

4.4 Methods of data analyses

According to Doppelt and Schunn (2008: 197), both quantitative and qualitative tools should be used simultaneously in learning environment research in order to achieve wider and deeper understanding of the field. Since our research included two questionnaires with multiple-choice and open-ended questions, the analyses of data included not only quantitative but also qualitative features. We were hoping this would bring the depth and more profound insight into our study as mentioned by Doppelt and Schunn. The use of different data analyses among the groups of students and teachers was also natural due to the size of the groups. The amount of students using the classrooms is clearly larger than the number of teachers. Hence, it was logical to use

quantitative methods with the large number of students and qualitative methods with the group of teachers.

By combining both qualitative and quantitative research methods, it is possible to combine the strengths of both methods, such as large, representative samples of the quantitative approach and profound, thorough responses of the qualitative approach. The combination of words and numbers as research results has the dual advantage of bringing more meaning and precision to the study. This can also increase the validity and generalizability of the results. However, when combining multiple methods for data analysis, the amount of skills and knowledge needed for conducting the analysis increases. (Dörnyei: 2007.) Since there were two people doing this research, one of which was more familiar with qualitative data analysis and the other more comfortable with numerical data, this approach seemed the best approach for us.

Next, we will explain in detail the analysis of data collected from students after which we will describe the analysis of teacher responses.

4.4.1 The analysis of student responses

The student questionnaire consisted mostly of multiple choice questions accompanied by a Likert scale. Hence, the data analysis of the questionnaire lay heavily on statistics making it quantitative. According to Cohen et al. (2013: 606, see also Dörnyei 2007: 209), there are two ways of presenting results in quantitative research. Descriptive statistics summarizes numerical data in a tidy form without making any inferences or predictions. The mean, the mode, the range and the variance are examples of descriptive statistics. They simply report what has been found. Inferential statistics, by contrast, aims to make generalizations of the results to cover the whole population based on probability. Usually inferential statistics offer more valuable and powerful tools for research though sometimes descriptive statistics may speak for themselves. In order to increase the significance and credibility of our research findings, we will use both descriptive and inferential statistics in the analysis of the student responses. The use of inferential statistics allows us to draw conclusions that can be generalized beyond the participants and presenting descriptive statistics will hopefully further support our findings.

When performing statistical analyses, one should acknowledge the mathematical features of the data and, based on that information, define the nature of statistics required for the analysis. Since we used Likert Scale in the questionnaire, the level of data collected from the students in this survey was ordinal. Ordinal scales classify and introduce an order into the data. It is possible to place data items in an order but the distances between each point of the scale cannot be assumed. (Cohen et al. 2013: 604–605; see also Vehkalahti 2008: 35.) In other words, the variables used in our questionnaire (1 = strongly disagree, 2 = somewhat disagree, 3 = somewhat agree, 4 = strongly agree, 5 = neither agree nor disagree) can be placed in an order from 1 to 4 but the mathematical distances between the variables cannot be measured. The fifth variable (neither agree nor disagree) was left out of the statistical analysis because it can be understood as a 'null response'.

Determining the scale of data is important because it dictates which statistical tests can be used in the analysis. Since there was an element of comparison in our research question, the appropriate method for data analysis was the t-test. According to Larson-Hall (2012: 249), the t-test compares the mean and standard deviation of one group to another. The data of the test consists of sets of numerical scores from two groups. In our research, the students answering the questionnaire in Classroom M formed one group and the students in Classroom T formed the other group. To be more specific, we used independent samples t-test in the analysis because the groups contained completely different people and the groups evaluated different classrooms.

Cohen et al. (2013: 605–606) claim that one should not use t-tests to ordinal data, such as Likert scales. Vehkalahti (2008: 34–37) also admits that the Likert scale has the mathematical characteristics of an ordinal scale. Yet, if we simply settle for that, the statistical analysis remains superficial due to the limited statistical possibilities ordinal scales have. Measuring the mean, for example, requires interval scale as opposed to ordinal. In practice, however, statistical analyses are run with Likert scales as if they were interval. Cohen et al. (2012: 605) say that interval scales include a regular and equal interval between each data point. Based on Vehkalahti's (2008: 34–37) explanation, one can think that the Likert scale has an exact and same interval between each data points and the anomaly between the data points is caused simply by a measuring error. If there were not any errors in the measurement, Likert scales would

be purely nominal. This, however, is unrealistic because errors are always present in measurements. Hence, it was possible to count the mean, dispersion and correlation form the Likert scales of our student survey and use the information in statistical analysis, such as the t- test.

According to Larson-Hall (2012: 246–249), every statistical result is linked to a null hypothesis and the statistical procedure tests its probability. In the matter of t-tests, the null hypothesis will say there is no difference between two groups of scores. The p-value describes the probability of the null hypothesis being true. Usually, the p-value needs to be below $\alpha = .05$ for a result to establish statistical significance. If the p-value ends up being below the pre-determined $\alpha = .05$, the null hypothesis can be rejected. That would bring us to the conclusion that there was a difference between the two groups. In other words, a null hypothesis is first provided in statistical testing and then the hypothesis is tested mathematically. The test returns a p-value, which is the probability that one would get the same results if the null hypothesis were true. In this study, the null hypothesis (H_0) was that there was no difference between the responses of the students based on the classroom they were evaluating. In other words, one classroom is not better than the other by its physical, psychosocial or pedagogical features based on the students' responses. If the p-value turns out to be below $\alpha = .05$, the null hypothesis will be rejected, which means that one classroom is somehow better than the other according to the students.

In addition to numerical data, the student survey also included one open-ended question where the students were asked to describe what a good classroom for learning English would be like. The question was added in the survey in order to see if new themes would come up in the matter as opposed to the ones covered in the statements. This part of the survey was an additional element that did not give us any answers to our research questions, per se. Hence, we will go through the results briefly by listing some of the most common answers and highlighting some answers that stood up from the responses.

4.4.2 The analysis of teacher responses

As mentioned above, the aim of the questionnaire for teachers was to gather information regarding their opinions on and experiences in the modernized language classroom. The goal was not to collect large data from the teachers and generalize the results. Qualitative methods are concerned with people's opinions, feelings and experiences and they try to understand and describe natural situations as they are (Tuomi and Sarajärvi 2009).

Since an open-ended questionnaire was used to gather data, it was appropriate to apply content analysis as the method of analyzing the data. Content analysis is a basic method used in a qualitative study, and as described by Kyngäs and Vanhanen (1999: 3-12), it is essentially a way of analyzing various documents in a systematic and objective manner. A document in this context can mean anything from books to interviews that have been transcribed into writing. In this case, the documents were teachers' written responses to the questionnaire.

The analysis of the data collected from teachers began by thoroughly reading each person's response in turn and marking any distinct content elements, substantive statements and/or key points relative to the study. Certain themes emerged quite clearly from the teachers' responses and different statements and key points were collected under each theme. The themes that emerged from the teachers' responses were the teachers' opinions considering the changes made in the modernized classroom during the renovation and the modernized classroom's effect on teaching. Furthermore, an overall opinion of the modernized classroom was examined based on the teachers' answers. As, for example, Dufva (2011: 139) suggests, we read through the responses multiple times and made notes and observations each time in order to make sure nothing had gone unnoticed and to see which parts of the material are relevant to the research questions. The idea behind this is to reduce data and leave out any irrelevant information (Tuomi and Sarajärvi 2009: 109). As explained by Tuomi and Sarajärvi (2009: 92-93), in content analysis the data is examined by classifying different phenomena and highlighting differences and similarities that occur in the material that is being looked into. The findings are then summarized and explained to the reader. (see also Dufva 2011: 139, Dörnyei 2010: 99, Tuomi and Sarajärvi 2009: 108-109).

Schreier (2012: 7) explains that qualitative content analysis consists of opening up the data, discovering new things about it and bringing it together in new ways. Tuomi and Sarajärvi (2009: 108) add that after these steps the material from the data gathered should be a concise and logical entity. The analysis aims to create clarity to the data so that clear and reliable conclusions can be made about the phenomenon (Tuomi and Sarajärvi 2009: 108). Schreier (2012: 2) writes that Data never "speaks for itself", nor does it have a specific meaning. Meaning is something that the recipients create and construct. As Tuomi and Sarajärvi (2002:115) point out, content analysis is based on the researcher's interpretation and reasoning.

5 THE COMPARISON OF THE MODERNIZED AND THE TRADITIONAL CLASSROOM AND THE QUALITIES OF A GOOD ENGLIHS CLASSROOM ACCORDING TO THE STUDENTS

5.1 Students' perceptions on the modernized and traditional language classrooms

The results listed in this chapter are based on the answers received from students in Classroom M and Classroom T by a survey (see Appendix 1). As mentioned earlier, the majority of students who had English lessons either in Classroom M or in Classroom T at the time of data gathering participated in the survey and the students answered the survey based on their perceptions on their current English classroom. From a total of 183 students 81 students answered the questionnaire in Classroom M and 102 students in Classroom T. The gender and grade varied among the respondents as described in Table 1. Seventh graders in Finnish junior high schools are usually 13 to 14 years old whereas high school usually starts at the age of 16 and lasts 3 to 4 years. Hence, the age of the student respondents in this study varied approximately from 13 to 19 years. However, we can only speculate the age of the respondents since their grade level was only asked in the questionnaire as opposed to age. The grade and gender frequencies varied quite a lot between the classrooms, which was only natural since the total amounts of the respondents between the classrooms were also different.

Before statistical analyses, the students' responses were checked to see if anyone of the respondents showed a tendency to repeat the same response on each statement. This would have indicated that the respondent had checked the boxes in the questionnaire without giving any thought on the matter, which would have made the responses invalid and worth elimination. This was a genuine concern due to the respondents' young age and somewhat obligatory nature of participation in the study. Based on the quick scan, however, there was variation in every respondent's answers, which let us believe that the respondents had focused on answering the survey and that their responses could be considered valid and truthful. Hence, all responses were included in the analyses.

The Likert scale in the survey included option 5 meaning *'neither agree nor disagree'*. The response can be mathematically interpreted as having no value whereas computerized statistical programs, such as SPSS and Excel, analyze it as if it was number 5 thus affecting the calculations and statistical analyses. Therefore, all responses with number 5 were excluded from the data before the analysis. This is also the reason why the number of responses (N) may be lower in the statistics later on compared to Table 1.

Table 1. Frequencies and percentages of the grades and genders among the student respondents in Classroom M and Classroom T.

	Classroom M (f)	Classroom M (%)	Classroom T (f)	Classroom T (%)
Grade 7	23	28	0	0
Grade 8	0	0	31	30
Grade 9	12	15	26	25
High school	46	57	45	44
Male	35	43	41	40
Female	46	57	61	60
Total	81	100	102	100

In order to see if the modernized language classroom is a better learning environment than the traditional classroom based on its physical, psychosocial and pedagogical features according to the students, sum variables' independent-samples t-test was used in the analysis. This was done by grouping 24 statements of the survey in three different groups. Group one included statements concerning the classrooms' physical features, the statements in the second group focused on the psychosocial elements of the classrooms and the third group included statements about the pedagogy used in the classrooms. The sum variable of each statement group in the two classrooms was

calculated by determining the mean value (*M*) of each statement group based on the answers received from the students in Classroom M and Classroom T separately. The sum variables between the two classrooms were then compared by using independent-samples t-test in order to see if the differences in the mean values between the classrooms had any statistical significance.

In the matter of physical learning environment, an independent-samples t-test found that there was statistically significant difference in the mean values between the responses among students in Classroom M (*M* = 3.28, *SD* = .52) and Classroom T (*M* = 2.61, *SD* = .50), *t*(181) = -8.87, *p* = 0.000. The mean value of Classroom M being higher than that of Classroom T indicates that students appreciate the physical features of Classroom M more than Classroom T thus making it a better physical learning environment. With a *p* value of .000, there is less than .01 per cent possibility that the result is merely by chance.

Similar results were found when comparing the psychosocial features of the two classrooms. There was statistically significant difference in the mean values between the responses among students in Classroom M (*M* = 3.42, *SD* = .59) and Classroom T (*M* = 3.15, *SD* = .59), *t*(180) = -2.98, *p* = 0.003. Also in this case, the modernized classroom received higher mean value than the traditional classroom, which means that the students ranked the modernized classroom higher than the traditional classroom by its psychosocial characteristics. With a *p* value of 0.003, the possibility for the result to occur by chance is 0.3 per cent.

The students also ranked pedagogy used in the modernized classroom higher than in the traditional classroom. The independent-samples t-test showed that there was a statistically significant difference in the mean values between Classroom M (*M* = 2.81, *SD* = .40) and Classroom T (*M* = 2.64, *SD* = .35), *t*(181) = -3.23, *p* = 0.001. With a *p* value of 0.001, the possibility for the result to occur by chance is 0.1 per cent.

To sum up, it seems that the students find the modernized classroom a better learning environment than the traditional classroom from its physical, psychosocial and pedagogical features according to the results. However, the differences of the mean values between the classrooms are quite low. In the matter of physical features, the difference is 0.67. Based on the classrooms' psychosocial atmosphere, the difference is

0.27 and with pedagogical features the difference is only 0.17. The differences between the values cannot be very high because the possible range between the values is from 0 to 3. That being said, even the number of 0.17 is statistically significant yet very low. Nonetheless, it is safe to say based on these results that the classrooms differ from their physical features the most, which was quite expected a result. Theoretically, psychosocial features of a classroom should not be affected by a renovation because the features have more to do with human relations, communication and interaction, which cannot be changed much with a new set of furniture. A possibility for pedagogical characteristics to change after modernization of a classroom, on the other hand, exists and the results of our survey may indicate a slight difference between the classrooms on that matter.

A relevant feature of the results is the extremely low p values among all three variables. Because the p values are lower than $\alpha = 0.05$, the null hypothesis can be rejected, which, in our case, means that there is a difference in the physical, psychosocial and pedagogical features between the classrooms. Low p values also indicate that the results can be generalized to cover the entire school population. In other words, we would have received similar results if students answering our survey had been different people from the school. The statistics of the independent-samples t-tests are listed in Table 2.

Table 2. Independent-samples t-test results of the students' perceptions on the modernized (M) and the traditional (T) language classrooms calculated from sum variables.

Classroom		Mean	SD	N	p-value	t-statistic	df
Pedagogical	M	3.28	0.52	81	0.000	-8.867	181
learning environment	T	2.61	0.50	102			
Psychosocial	M	3.42	0.59	81	0.003	-2.976	180
learning environment	T	3.15	0.59	102			
Pedagogical	M	2.81	0.40	81	0.001	-3.234	181
learning environment	T	2.64	0.35	102			

In order to illustrate the range of scores in the two student groups, boxplots of the results can also be found in Figure 7. The box in each figure contains the middle 50 per cent of scores of the groups. The black line in each box indicates the median score (M_d) among the group and the vertical line in each box indicate the range of scores given by the students. Outliers, which are responses that are distant from other students' responses, are indicated with a circle or a star outside of the range of scores. With the

help of the boxplots it can be easier to picture how similarly or differently the students answered the survey in the different classrooms.

As one can see in Figure 7, the box plots in the figure representing physical features of the classrooms differ the most between the classrooms, which further illustrates that the students' responses in the two classrooms varied the most when asking them about the physical learning environment. Box plots of the pedagogical features, on the other hand, are very similar. Especially the boxes, which represent the middle 50 per cent of scores from the groups, are almost identical by size and placement. The size of the boxes and the vertical lines in the figures indicate the similarity of the responses between students in their own groups: the smaller the box and the line, the more similarly the students have responded. Thus, it seems that the highest level of variation in the responses occurs in Classroom T among statements covering physical and psychosocial features. In the matter of pedagogical features, the students seem to be quite unanimous in both classrooms.
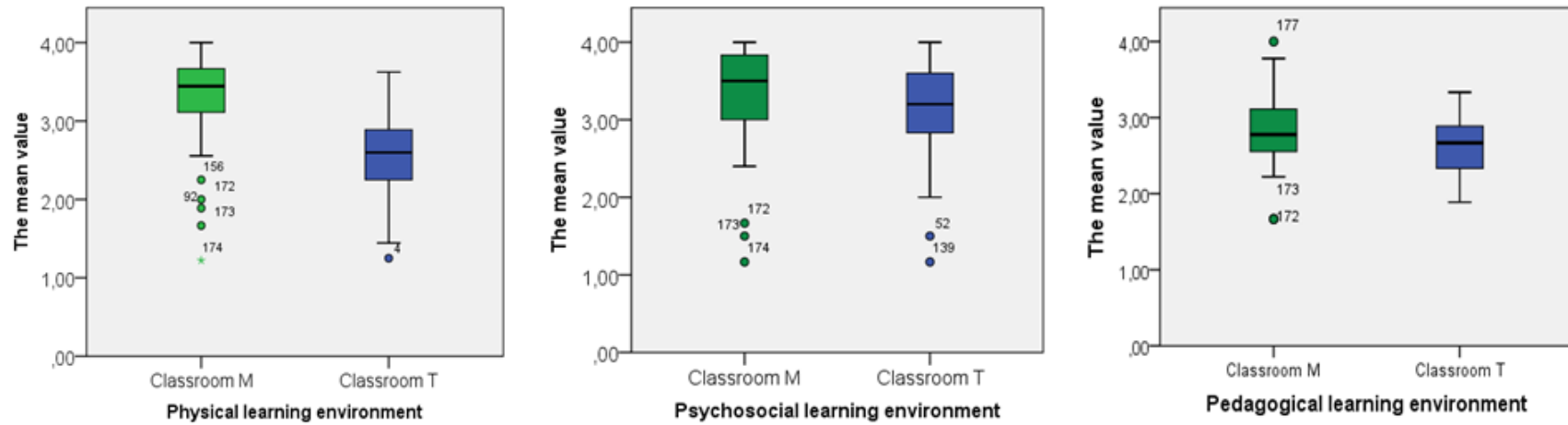
Figure 7. Box plots from the mean values received from sum variables of the student responses concerning the physical, psychosocial and pedagogical characteristics of the modernized and the traditional classrooms.

In order to see in more detail which individual statements received the most different responses from the students in the different classrooms, independent-samples t-test was also used with each statement individually. The mean values received from each statement among the whole group of students in both classrooms were calculated and these numbers were then compared between the classrooms. Next, we will focus on the findings received from individual statements concerning the physical and psychosocial features of the classrooms. The statements concerning pedagogical features are covered in the following subsection of this chapter that focuses specifically in pedagogical aspects.

In the matter of physical features, the results are shown in table 3. All in all, 9 statements that concerned the physical features of the classroom were included in the survey. The higher the mean value of each statement is on a scale of 1 to 4, the more the students agree with the statement. As one can see from table 3, the mean value is higher in Classroom M in each statement and the result is statistically significant in seven statements out of nine. The differences in the mean values were particularly clear with statements concerning colors (0.98) and chairs (1.2) of the classrooms and students' overall opinion about the level of modernity (1.63) and comfort (0.8) of the classrooms. Based on the results, the students appreciate the furniture and the aesthetic features of the modernized classroom more than in the traditional classroom. However, statements concerning the amount of space and seating arrangements in the classrooms did not cause statistically significant results between among students. Hence, the differences between the mean values with statements 1 and 6 occur only by chance.

Different numbers in the amount of responses (N) with each statement means that some students have chosen option number 5 '*neither agree nor disagree*' which has been erased from the calculations. An interesting remark of the results in table 3 is the low amount of responses in classroom T in statement 9 that stated *This classroom is a good place for learning languages*. Out of 102 students, 17 have answered 5 'neither agree nor disagree'. Apparently it was somehow difficult for students to have an opinion the matter. Perhaps some students think that a classroom, in general, is not a good place for language learning or they do not place much emphasis for the location of language learning. This is, of course, only speculation but it would have been interesting to get students explain their response.

Table 3. Independent-samples t-test results of the students' perceptions on the physical features in the modernized and the traditional language classrooms. Statistically significant statements are marked with an asterisk (*).

Statement	Classroom	*Mean*	*SD*	*N*	*p-value*	*t-statistic*	*df*
1. There is enough space in this classroom.	M	3.53	0.69	80	0.160	-1.410	172.2
	T	3.38	0.72	101			
*2. Colors are nice in this classroom.	M	2.99	0.73	79	0.000	-8.304	175
	T	2.01	0.82	98			
*3. Desks are good in this classroom.	M	2.90	1.00	81	0.001	-3.452	178
	T	2.42	0.83	99			
*4. Chairs are good in this classroom.	M	3.44	0.84	80	0.000	-8.942	177
	T	2.24	0.93	99			
*5. There are no visual blocks that keep me from following lessons in this classroom.	M	3.40	0.74	80	0.009	-2.649	176
	T	3.06	0.93	98			
6. There is a good seating arrangement at our English lessons in this classroom.	M	3.18	0.98	80	0.791	-0.266	169.1
	T	3.14	0.99	96			
*7. This classroom is modern.	M	3.46	0.71	79	0.000	-14.889	175
	T	1.83	0.73	98			
*8. This classroom is comfortable.	M	3.36	0.75	80	0.000	-6.265	173
	T	2.56	0.92	95			
*9. This classroom is a good place for learning languages.	M	3.33	0.77	76	0.002	-3.137	159
	T	2.94	0.79	85			

The same procedure was done for the statements concerning the psychosocial features of the classrooms and the results are listed in table 4. As the table clearly shows, the results in this statement group were not as statistically significant as in the statement group concerning the physical features of the classrooms. Though the mean value is higher in Classroom M than Classroom T in most cases in this statement group, statements numbers 10 and 11 were the only ones where the difference between the mean values was statistically significant. These two statements covered the students' overall satisfaction towards their classroom. The mean value was higher in Classroom T on a statement number 13 which covered the students' opinion about the level of peace and quietness among their class, which could indicate that students behave more peacefully in the traditional classroom. The difference between the mean values, however, is somewhat small and the *p* value of 0.22 indicates that the difference is statistically not significant. However, one can speculate if the result is caused by the new type of furniture, such as sofas and rolling chairs, found in the modernized classroom that may create restlessness among students.

Table 4. Independent-samples t-test results of the students' perceptions on the psychosocial features in the modernized and the traditional language classrooms. Statistically significant statements are marked with an asterisk (*).

Statement	Classroom	Mean	SD	N	p-value	t-statistic	df
*10. I feel comfortable in this classroom.	M	3.48	0.68	77	0.000	-5.824	168
	T	2.75	0.91	93			
*11. I enjoy coming to this classroom.	M	3.49	0.72	78	0.000	-6.535	167
	T	2.67	0.88	91			
12. I feel safe in this classroom.	M	3.64	0.65	76	0.416	-0.815	162.6
	T	3.56	0.69	91			
13. There is peace and quiet among our class in this classroom.	M	3.12	0.87	78	0.216	1.234	154.3
	T	3.27	0.76	100			
14. The atmosphere among our class is good in this classroom.	M	3.39	0.84	79	0.388	-0.865	162.3
	T	3.29	0.79	98			
15. My English teacher acknowledges me in this classroom.	M	3.45	0.89	74	0.633	-0.478	152.8
	T	3.38	0.85	97			

After seeing the results from tables 3 and 4, one may wonder why the results of the independent-samples t-tests in the statement groups (table 2) looked so different from the individual statements. This can be explained with mathematics: the sum variable is the result of all the answers received from students in each statement group in the two classrooms as opposed to individual statements. The fact that the mean values in most individual statements follow a trend where Classroom M received a higher mean value on the majority of statements throughout the survey has an effect on the results of the sum variables. As mentioned earlier, the differences in the mean values of the sum variables were the highest in the matter of physical features and clearly lower in the sum variables concerning psychosocial features. The reason for that can be seen in tables 3 and 4: consensus among the students was higher when asking them about the physical features of the classrooms. The differences between the mean values received in the different classrooms were higher and in favor of Classroom M. Moreover, the results concerning the physical features were statistically significant more often than with statements concerning psychosocial features. This is only natural when doing research on a renovated classroom. The modernized classroom has new furniture and appearance, which the students seem to find more appealing than facilities in the traditional classroom. Psychosocial features, such as comfort, safety and social atmosphere, on the other hand, are more difficult to change with renovation.

The overall outcome of the results indicates that students find Classroom M a better physical, psychosocial learning environment. In order to add weight to this finding, other statements were also compared between the student groups. The sum variable for statements number 27, 28 and 29 were also calculated individually and independent-samples t-test was used to see if the mean values received form the students in the different classrooms varied because of chance or possibly because of actual differences in the classrooms. Statements 28 and 29 had to do with the students' overall satisfaction with the classroom where they were currently studying English. In statement 28 the students were asked if they wanted their English classes to be located in some other classroom than the one they were while answering the survey. In statement 29 the students were further asked if they wished their current classroom to be somehow different than it was during the survey.

When students were asked if they would prefer some other location for their English lessons than the one they had during the survey (i. e. Classroom M or Classroom T), independent-samples t- test showed that students in Classroom M (M = 1.6, SD = 0.763) were less keen on changing their current English classroom than students in Classroom T (M = 2.73, SD = 1.08), $t(169)$ = 7.634, p = 0.000. When the students were asked if they wished their English classroom to be somehow different than during the survey, respondents in Classroom T (M = 3.04, SD = 0.93) agreed more with the statement than respondents in Classroom M (M = 1.97, SD = 0.95), $t(167)$ = 7.33, p = 0.000. With these two statements, the differences in the mean values between the classrooms were over 1, which clearly shows that students prefer the modernized classroom. With p values being lower than 0.1, there is less than 0.1 per cent chance that the results were by chance.

Statement number 27 *The location of our English lessons has an impact on the level of enjoyment I feel during lessons* was added to the survey in order to see if there was a statistical difference between the groups' answers. A difference between the groups could indicate that one group put more emphasis on their learning environment in general than the other, which could have an impact on the overall results. An independent-samples t-test showed, however, that there was not a statistical difference between the group answers. Students in Classroom M (M = 2.91, SD = 1.02) agreed a bit more with the statement than students in Classroom T (M 2.84, SD = 1.11), $t(169)$ = -0.43, p = 0.67. However, a high p value of 0.67 indicates that the difference between the mean values of the two groups is not statistically significant. There is a 67 per cent chance that Classroom M getting higher score than Classroom T was merely a

chance. In other words, the students in both groups place the same level of value to the location of their English lessons when it comes to enjoying the lessons. This further indicates that we can rule out the possibility that the groups of students in the classrooms were somehow different based on their overall perceptions on the relationship between the locations of lessons and feeling comfortable during lessons. In other words, it is not likely that the higher scores of Classroom M was the result of a selective group of students who happened to put higher value to school utilities in general.

Finally, when the students were asked which grade they would give for their current English classroom, the results showed that the students ranked the modernized classroom higher than the traditional classroom. Classroom M got a mean score of 4.05 whereas Classroom T scored 3.11. The difference in the students' responses can be seen in the bar plots in figure 8. As one can see in figure 8, no one in Classroom M graded the room *poor* whereas over 20 per cent of students gave the classroom grade *excellent*, with *good* being the most common grade. Classroom T, on the other hand, received few *poor* grades and even smaller amount of grade *excellent.* This result further indicates that the students, in fact, appreciate the modernized classroom more than the traditional classroom. However, independent-samples t-test was not used with these results. Hence, any generalizations or remarks about the statistical significance of the results cannot be made. The results only represent the students who participated in the survey.

Toikka (2015) also asked students to grade their new school building in his research on a scale of 4 to 10, which is a typical grading scale in the Finnish school system. The students ended up giving the school a grade of 7.57, which may seem quite low. Comparing the result to ours is quite challenging since our students only graded one classroom as opposed to an entire building like in Toikka's study. Also, the scale was different in both studies. Instead of using the grading scale from 4 to 10 as Toikka, we wanted to create a different grading scale in our research. Because of the certain connotations from school, the meaning of different grades on a scale of 4 to 10 varies among people thus having an impact on the validity of the result. If one person thinks that a classroom is good, (s)he can give the room grade 7 whereas other person would give a good classroom grade 8 or even 9. Hence, the value of different grades on the scale depends heavily on the respondent. Toikka also asked teachers to grade the school building and the score among teachers was higher (8.64) compared to students. This may indicate that teachers appreciate the new building more than students or that

teachers and students have different ways of grading. Both grades from the students and the teachers in Toikka's study and the results from our study, however, indicate that people appreciate modern and new school facilities.

Students are an excellent group of people when evaluating the overall characteristics of a classroom because they use the facilities daily. However, students may not be the most appropriate respondents when it comes to pedagogical matters of the classroom. Therefore, there is still a need for teachers' opinion on the matter, which we will focus on later. Nonetheless, some results on the pedagogical features of the classrooms were also received from the students' survey, which we will take a closer look next.
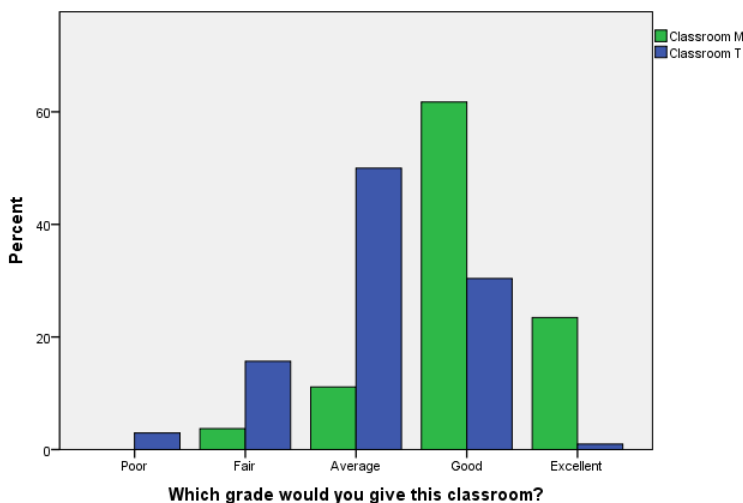

Figure 8. Bar plots of the grades (poor, fair, average, good, excellent) given by the students for Classroom M and Classroom T. The bars represent the percentages of students grading the classrooms.

5.2 Students' perceptions on the pedagogical features of Classroom M

Since the second research question concerned the pedagogy used in the modernized classroom, it was more natural and perhaps easier to find answers to the questions from the teachers. However, since one part of the student survey focused heavily on pedagogy, it is worth taking a closer look at students' responses on the matter. The mean value of each statement concerning pedagogy was calculated among students in both classrooms and the values were compared by using independent-samples t-test. The mean values of only two statements out of nine turned out to favor the modernized classroom statistically

significantly. The statement *English lessons located in this classroom are interesting* received a higher mean value in the modernized classroom (M = 2.99, SD = 0.84) than in the traditional classroom (M = 2.70, SD = 0.81), $t(168)$ = -2.28, p = 0.024. Also the statement *This classroom motivates me to learn* received a higher mean value in the modernized classroom (M = 2.75, SD = 0.98) than in the traditional classroom (M = 1.93, SD = 0.82), $t(146)$ = -5.56, p =0.000. The statements, however, do not take a stand directly on the nature of teaching in the classroom. Both motivation and interest are clearly important elements of learning but the increase of such factors can be caused by other characteristics in the classroom than the nature of teaching, such as classmates, for example. It is also worth mentioning that the p value of statement 16 is also very low though not statistically significant. Hence, it is quite safe to say that according to the students, technology is more often used in the modernized classroom as opposed to the traditional classroom during English lessons. The possibility for the result to occur by chance is only 8 per cent. The statement covered a list of technological equipment, such as Smart Boards and iPads, so it is not possible to know which equipment in particular are being used in the classroom according to the students. Perhaps the presence of multiple Smart Boards in Classroom M makes students feel that technology plays a bigger role there. Moreover, high school students in the target school get their own iPads for studying and the use of iPads is also possible for junior high school students though they do not have their own individual machinery. The result of statement 16 could also indicate that students feel that iPads are used more in the modernized classroom for studying purposes. However, the difference of the mean values between the classrooms was quite low, which indicates that technology also plays a role in the traditional classroom.

A positive remark made of the results was the high level of agreement among students in both classrooms when they were asked if technology (statement 16), pair or group work (statement 17) and oral exercises (statement 18) were often part of their English lessons. On a scale of 1.0 to 4.0, statements focusing on these aspects received mean scores of over 3.5 in each case. When the mean value reaches close to 4.0, it means that the students strongly agree with the statement. Perhaps this means that the teachers in the school have already adopted modern teaching methods and they do not need a modern learning environment for the application of new learning theories. However, the mean scores were quite low in both classrooms when students were asked if they often study without the use of books during their English lessons (statement 22), which may indicate that some traditional elements of

teaching still appear in the school. However, the results mentioned in this paragraph were not statistically significant so interpretations of the numbers must remain cautious.

The results of all nine statements received from independent-samples t-test are listed in Table 5 and bar plots of the mean values are found in Figure 9. Though there are slight differences in the mean values between the classrooms, only the results of statements 21 and 24 were statistically different. Since the differences in the students' responses between the two classrooms are very similar and the differences in the values are merely by chance in most cases, the results indicate that the pedagogy used in the classrooms is not that different from one another even though the classrooms are somewhat different from their physical features. However, the results in table 5 follow a trend where Classroom M received a higher mean score in the majority of statements. Due to these remarks, the p value of the sum variables concerning pedagogical features in table 2 is low and statistically significant. However, as previously stated, the differences between the mean values of the sum variables concerning pedagogy between the classrooms were extremely low. The reason for this can be seen in table 5: the differences between the mean values among each individual statement are extremely low. Hence, based on these results, it seems that the students were somewhat unanimous in both classrooms in the matter of pedagogy and differences on the level of pedagogy used in the two classrooms are quite difficult to find.

Table 5. Independent-samples t-test results of the students' perceptions on pedagogy in the modernized and the traditional language classrooms. Statistically significant statements are marked with an asterisk (*).

| Statement	Classroom	Mean	SD	N	p-value	t-statistic	df
16. Technology (Smart Boards, iPads, Smart phones, Internet) often plays a role in this classroom during English lessons.	M T	3.74 3.58	0.52 0.67	77 101	0.08	-1.749	175.8
17. We have often pair or group work in this classroom during English lessons.	M T	3.66 3.65	0.62 0.58	77 98	0.92	-0.10	173
18. We have often oral exercises in this classroom during English lessons.	M T	3.58 3.49	0.69 0.66	76 100	0.39	-0.87	174
19. Furniture arrangements in this classroom often vary during English lessons	M T	1.65 1.42	0.69 0.66	78 99	0.60	-1.89	142.7
20. The content of English lessons located in this classroom varies.	M T	2.96 2.97	0.75 0.70	78 98	0.94	0.07	174
*21. English lessons located in this classroom are interesting.	M T	2.99 2.70	0.84 0.81	77 93	0.02	-2.28	168
22. We study English often without textbooks or exercise books in this classroom.	M T	2.05 1.98	0.77 0.73	74 94	0.52	-0.65	166
23. I am often required to leave my seat in order to complete a task in this classroom during English lessons.	M T	1.84 1.79	0.78 0.72	76 98	0.62	-0.49	172
*24. This classroom motivates me to learn.	M T	2.75 1.93	0.98 0.82	64 84	0.00	-5.56	146
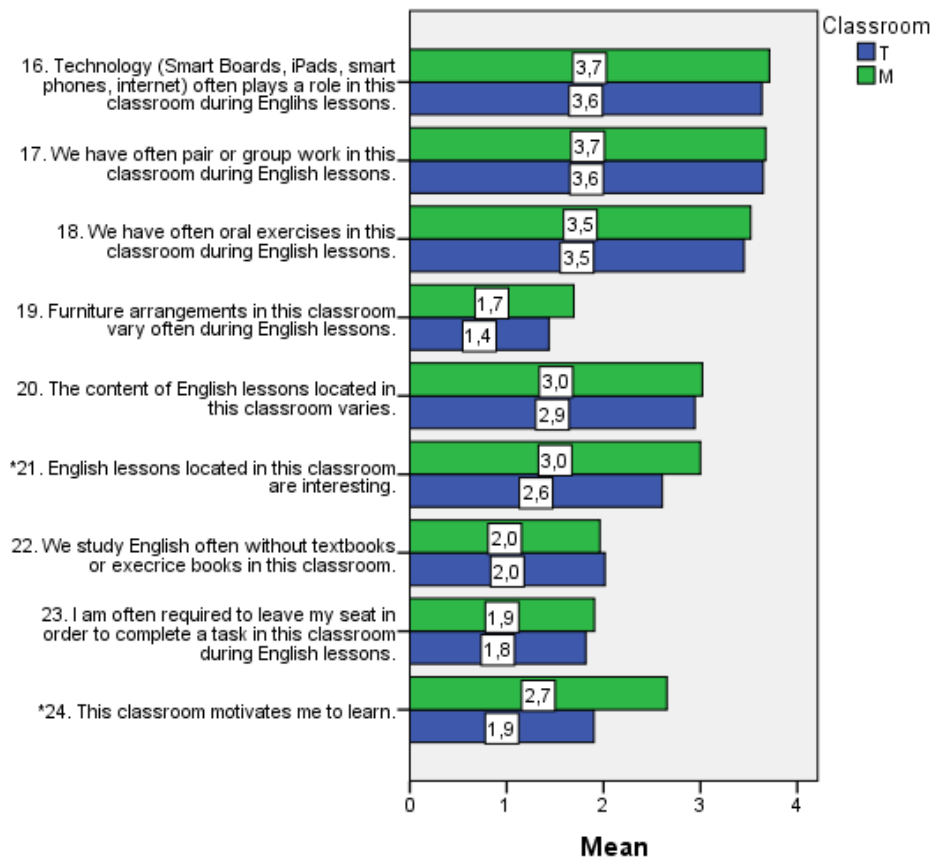
Figure 9. Bar plots of the mean values calculated from students' responses concerning pedagogy used in Classroom M and Classroom T. Statistically significant statements are marked with an asterisk (*).

Compared to the traditional classroom, the modernized classroom had distinctive features, such as multiple smart boards and versatile furniture found in the back of the classroom. These features supposedly increase the aesthetic appeal and pedagogical possibilities of the classroom. Therefore, students in the modernized classroom were asked if teachers actually take advantage of these new features while teaching English (statements number 25 and 26). The results were compared between high school students and junior high school students (grades 7, 8 and 9) in the modernized classroom in order to see if there were any differences between the groups' answers. According to the results it seems that the modern elements of Classroom M are used more with high school students than with junior high school students. The statement *Two smart boards are often being used simultaneously in this classroom during our English lessons* received a higher mean value among high school students (M 3.42, SD = 0.55) than among junior high school students (M = 2.73, SD = 1.10), $t(44.0)$ = -3.32, p = 0.02. Also the statement *The furniture found in the back of the classroom are often used during our English lessons* received a higher mean value among high school students (M = 2.24, SD = 0.99)

than among junior high school students (M = 1.61, SD = 0.70), t(72) = -3.10, p = 0.03. With p values of 0.02 and 0.03 the responses are statistically significant. However, the low mean values received from the latter statement indicate that the special furniture is not used very often in the classroom with either of the student groups based on students' perception.

5.3 Students' ideas of a good language classroom

The survey also included an open ended question that required the students to write down their answers. In the question the students were asked to describe the characteristics of a good English classroom. Despite the task being optional, a total of 81 students (79 %) answered the open-ended question in Classroom T and 59 students in Classroom M (73 %). Some students ended up commenting on their current classroom and the changes they would make in it instead of describing a completely imaginative classroom. Since there did not appear to be a clear difference between the students' responses in Classroom M and Classroom T, we have not separated the responses here based on the classroom where the student answered the survey. Instead, all the responses are analyzed as one group and some examples of the students' responses are also given. The examples are marked with an S (as in student) to avoid confusing these excerpts later on with the examples of teachers' responses. The responses were categorized under physical, psychosocial and pedagogical learning environments depending on the content of the responses.

> **Example S1:** Istuminen alkaa helposti väsyttää. Jumppapallot tai tyynyt penkeillä auttaisivat asiaa. Aivan ihanaa olisi luopua pakollisesta pulpetin ääressä istumisesta. Sen voisi toteuttaa niin, että luokassa olisi säkkituoleja, nojatuoleja ja sohvia rennompina istuimina ja tavarat (kirja, kynä yms.) voitaisiin pitää jollain tarjottimella tai kirjoitusalustalla. Luokassa olisi myös tavallisia pulpetteja, joiden korkeutta voi säätää, jotta halutessaan voi seistä. Kellään ei olisi vaikuista paikkaa, vaan säkkituoleilla ja sohvilla saisi olla vuorotellen. Lisäksi smart-tauluja olisi ainakin kaksi, ettei edessä istuvan pää häiritse näkemistä. *(Tyttö, lukio, Luokkahuone T)*
> (You can get tired easily by sitting. Exercise balls or cushions on the chairs would help. It would be wonderful to get rid off the mandatory nature of sitting by a desk. That could be accomplished by having bean bag chairs, armchairs and sofas as more relaxed seats and we could keep all the stuff (the book, the pencil etc.) on a tray of some sort. The classroom could also include regular desks with an option to adjust their height so that you could stand. No one would have a seat of their own. Instead, you could choose where to sit. Also, there would be at least two Smart Boards so that the head of a person sitting in front of you would not enable you to see. *(Girl, high school, Classroom T)*)

For the most part, the responses included the same themes as the statements with physical features of the classroom being the most common topic among the responses. All in all, the high frequency of physical features in the responses was striking yet expected. In studies by Piispanen (2012) and Toikka (2015), physical features also came up frequently in students' responses, as mentioned in Chapter 2.3. Furniture, in particular, appeared most frequently in the comments; the majority of students found it important that desks and chairs in the classroom were comfortable and practical. Several students also wished for additional furniture, such as sofas, soft benches and bean bags, in the classroom. High frequency of furniture in students' responses is only natural since students sit in chairs and in front of desks for dozens of hours per week in schools. In addition to furniture, students were hoping for different coloring and enough space in the classroom. Commenting on the aesthetics is also natural because it is the most visible feature of a classroom and making suggestions on how to improve it is quite easy.

The importance of furniture came up in Toikka's (2015) research, as well, when he asked students opinions on their new school building. When students (n = 33) were asked what was their favorite spot in the school, the majority of students mentioned a certain type of loft where there were sofas for the students to sit on. Toikka's personal observations in the school facilities supported the result; the students had taken over the loft and they "practically lived there" during their spare time. Toikka suggests that the location and the visibility of the space most likely cause the popularity of the space. While that is most likely true, the presence of comfortable furniture probably increases the appeal of the area among students, as well. In the questionnaire, students also listed another space with sofas among their most favorite locations in the school because it was a good place for hanging out and "slouching". One might even simplify and say that as long as there are sofas somewhere in the school building, students will find their way there and start using the furniture.

> **Example S2:** Huono ilma saa väsyneeksi, huono valo saa päänsäryn. Vaikka istuimet ja tekniikka on kohdallaan täytyisi silti kiinnittää huomiota vielä tärkeämpiin asioihin, kuten juuri antamani esimerkit. (*Tyttö, 9. luokka, Luokkahuone M*)
> (Poor air quality makes you tired, bad lighting gives you a headache. Though seats and technology works, they should pay attention to more important factors, such as the examples I just mentioned. (*Girl, 9th grade, Classroom M*))

Another theme that stood out from the responses was the quality of air which can also be categorized as one of the physical features of the classroom. All in all 13 students suggested that the classroom should have a good air quality or air conditioning. Interestingly 11 responses concerning the quality of air were received from students in classroom T and only two responses in Classroom M. However, the amount of comments on the air quality is too small for making any further assumptions on the matter. Nevertheless, poor quality of air is a serious national problem in Finnish school facilities that can decrease learning outcome, increase student absences and cause health problems. According to a research conducted by The National Institute for Health and Welfare (THL 2016), poor ventilation and a high classroom temperature decreased student performance in mathematics by 4 per cent. Furthermore, 43 per cent of students who took part in the study, said they had had one or multiple symptoms in their upper respiratory tract within the school year and 46 per cent of the respondents had had to stay home from school due to their symptoms during the school year. The study was done by using the results of a national mathematics test of Finnish 6th grade students (N = 6787) from 2007. Health and background information of 63 per cent of the students were also collected and the temperature and ventilation of 108 classrooms were measured.

> **Example S3:** [luokkahuoneen tulisi olla] Kotoisampi ja pienempi, että ryhmässä olisi enemmän "läheisyyttä", huomaavaisuutta ja yhdessä tekemisen meininki. Suuremmat pulpetit. *(Tyttö, 9. luokka, Luokkahuone M)*
> ([the classroom should be] More cozy and smaller so that there would be more 'closeness', courtesy and togetherness [among the students]. Bigger desks. *(Girl, 9th grade, Classroom M)*)

Few students commented on the seating arrangement. The interpretation of such a response is somewhat challenging because seating arrangement can refer to the order of desks in the classroom or the people students are sitting next to or both. Depending on the interpretation, this response can be categorized either under physical or psychosocial features. Two responses, however, can be clearly marked as part of the psychosocial features. A student in Classroom M in Example S3 wished for a smaller teaching group in order to increase the social atmosphere and closeness among the peers. Another student mentioned that his or her current classroom (M) is a good location for learning English although the teaching group has an effect on the atmosphere in the room. In the target school, high school students have individual timetables so the people with whom students share their classes change constantly, which may affect the atmosphere in the classroom among students. Junior high school

students on their 7th, 8th or 9th grade, on the other hand, share their classes with the same students for three years, which probably increases the closeness of the students in the group. However, the comment of Example S3 was written by a girl in the 9th grade which may indicate that there are some social problems among her classmates.

In the matter of pedagogy and the role of the teacher in the classroom, five students had opinions about the issue in their responses. One student said that the teacher should be positive and supportive. Another student mentioned that teaching should be enthusiastic instead of boring and silent. One student mentioned that teachers should spend more time in the center of the classroom instead of being in a corner. Two students also wished for a higher use of technology instead of books. The use of technology in the classroom was mentioned in several responses, which can be further categorized under physical or pedagogical features.

> **Example S4:** Seinillä voisi olla julisteita joissa on englanninkielistä tekstiä. Luokan tietokoneiden käyttökieli voisi olla englanti, niin sitä tulee käytettyä käytännösskin. Karttoja englanninkielisistä maista niin tekee mieli oppia, että pääsee sinne. *(Tyttö, 9. luokka, Luokkahuone T)*
> (There could be posters with English text on the walls. The computers in the room could have Englihs set as their language so that you would have to use it [English] in practice. Also maps of Englihs-speaking countries so that it would motivate learning, so that I could travel there. *(Girl, 9th grade, Classroom T))*

The responses also included some surprising comments that did not come up in the statements. Some students were hoping that the classroom would include elements of the subject taught in the room. A total of 10 students mentioned that they would like the walls of the classroom to include inspiring and funny posters or banners written in English or maps of English-speaking countries. One student even suggested a special table in the center of the classroom where students would get to drink tea in order to get in the mood for studying English. In several schools in Finland, including the target school, teachers usually do not have their own classroom. Instead, teachers and their students often switch classrooms between lessons. Unlike chemistry or music, teaching English does not require much special equipment, which is why schools do not usually have specific English classrooms. Therefore, teachers tend not to decorate the classrooms according to the subjects, which may make the rooms look somewhat boring and uninspiring.

Example S5: Enemmän toimistomainen kuin luokkahuone, koulumme modernimmat luokat pvat paljon viihtyisämpiä ja muokattavampia. *(Tyttö, lukio, Luokkahuone T)*
(The classroom should look more like an offcie than a classroom, the more modern classrooms in our school are much more comfortable and more adjustable. *(Girl, High school, Classroom T)*)

Another feature worth mentioning was the amount of responses somehow commenting on the modernization processes made in the school building. All in all, 6 students in Classroom T said that a good language classroom should have the same qualities than the modernized classrooms they have in the school. Interestingly, one student in Classroom M also mentioned that a good language classroom would resemble the back section of Classroom M with sofas and colorful and versatile furniture. Furthermore, it seemed that most students' responses were inspired by modern features in other classrooms that they have encountered in the school, such as movable chairs, sofas and Smart Boards. Without few exceptions, the responses did not tend to include elements that one would not usually find in a classroom. In other words, the students' responses were quite conservative. After having spent over six years in Finnish school facilities, one probably has become used to the environment, which makes it difficult to imagine the space being somehow different.

For the most part, students' comments of a good English classroom included the same themes that were covered in the statements earlier in the survey. The students got to answer the open-ended question after the statements, which probably affected their way of thinking and the flow of their ideas. Placing the question at the end of the survey was, however, reasonable because an open-ended question at the beginning of the survey might have lowered students' motivation for answering the survey altogether. Furniture and other aesthetic decorative elements appeared most often in the comments, which indicates that students appreciate comfortable and practical furniture to sit on and study during lessons. Based on the number of decorative suggestions given by the students, it seems that they also pay a lot of attention to aesthetics and appearance of the classroom. The results of the open-ended question, however, were not analyzed statistically, which prevents us from making any generalizations on the matter. Therefore, the results are not statistically significant, either. The results simply represent the thoughts of the respondents.

In chapter 4, it was mentioned that we were somewhat suspicious of the benefits classroom renovation might bring in the target school. However, the results mentioned above proved our somewhat skeptical hypothesis wrong. It seems that students appreciate the physical,

psychosocial and pedagogical features of the modernized classroom more than that of the traditional classroom. This was evident based on the results received from the statements groups and some of the individual statements. However, it should be kept in mind that the differences in the responses between the two classrooms were quite low in many cases. Nevertheless, students clearly seemed to appreciate the modernized classroom more as the location of their English lessons and the need for making any changes in students' current English classroom was lower in the modernized classroom. Furthermore, Classroom M received a higher grade from the students than Classroom T.

So far, we have focused on the results received from the student survey. It is now time to shift focus from students to teachers and see how they feel about the modernized language classroom.

6 TEACHERS' PERCEPTIONS ON THE CLASSROOM RENOVATION AND ITS IMPACT ON PEDAGOGY

6.1 Teachers' views on the modernized classroom

In this chapter the most interesting and relevant points that arose from the data gathered from teachers are reported according to the themes described in chapter 4. This is done by providing excerpts of the teachers' responses in which relevant issues are enlarged upon and issuing brief explanations as to what is discussed. The excerpts have been numbered and marked with a letter *T* (as in teacher) in which case it is easier to refer to them later on in the text when the results are discussed and analyzed. The teachers were given pseudonyms in order to both to maintain their anonymity and ease referring to their answers. As mentioned earlier, four teachers out of six participated in the survey which focused on finding answers to our second and third research questions.

The first theme to be discussed is the teachers' overall opinion about the changes made in the modernized language classroom.

6.1.1 Teachers' opinions about the changes made for the modernized classroom.

As mentioned in chapter 4, many changes were made into the modernized classroom. For example, new furniture was purchased and the amount of information technology and other technological possibilities were increased. Some of the changes were well received and considered to bring something new to the classroom and increase the educational possibilities as well as comfort in the learning environment. The participant teachers had somewhat differing opinions concerning the choices made into the physical aspects of the classroom, but we managed to get a good general view on the subject from the teachers' data.

First we are going to present the results that indicate the positive effects of the modernization of the language classroom. The following examples show what the teachers considered to be good changes.

> **Example T1** Laura: Pidän [modernista] luokasta visuaalisesti, materiaalit ja värit ovat hyvät. Myös kahden smartin käyttö auttaa, jos luokkatila on äärimmäisyyksiään myöten täynnä.
> (I like the [modernized] class visually, the materials and colors are good. Also, having two smart boards help, if the classroom is extremely crowded.)
>
> **Example T2** Marjo: Rennompi opiskelu on mahdollista kalusteiden vuoksi; aiheen mahdollistaessa istuma- tai seisomapaikkansa saa valita oppimistyylin mukaan.
> (More relaxed studying is possible due to the furniture. If the topic enables it, you can choose the place to sit or stand according to your learning style.)
>
> **Example T3** Marjo: Eriyttämisen mahdollisuus on himpun verran suurempi mm. smarttien vuoksi.
> (The possibility of differentiation is slightly higher due to e.g. smartboards)
>
> **Example T4** Sanna: Kuunteluun luokka soveltuu toki hyvin koska siellä on irtokuulokkeet.
> (The class suits well for listening activities because there are wireless headphones.)
>
> **Example T5** Jenni: Kivaa on uudehkot ja toimivat laitteet. Kiva, että langattomat luurit käytössä kuuntelua varten.
> (It's nice to have fairly new and functional devices. It's good that we have wireless headsets for listening activites.)

One of the teachers mentioned the visual aspects, such as colors and materials, that were brought to the renewed classroom (example T1). A research by Toikka (2015) revealed that aesthetic factors in a classroom are important for students. For example, the use of colors can create comfort and a relaxed feeling in the learning environment. We could argue that Laura

believes aesthetic factors can enhance learning and teaching in some way because she specifically mentioned the use of colors and materials as positive factors. The new furniture was also mentioned by one teacher (Example T2) who allowed students to choose their working area if the subject at hand was suitable for it. Different working areas created with different furniture allow students to do different types of tasks in different parts of the classroom. All students do not have to do the same task at the same time, which is also one issue that constructivism promotes in learning (Brooks and Brooks, 1999). This possibility, however, did not appear in other teachers' answers and also Marjo takes advantage of this possibility only if the subject is suitable for it.

As became evident in the excerpts, the teachers appreciate the development of ICT in the classroom, especially the wireless headphones which make listening exercises easily accessible during lessons. As mentioned in chapter 2.1 the role of ICT has become important in schools. Modern technological devices enable different means of communication as well as information gathering during lessons and make it possible to use the vast contents of the Internet for teaching and learning purposes (Manninen, 2007). One of the teachers noted that having multiple Smart Boards increases the possibilities of differentiation, which was originally one of the reasons behind the decision of placing more than one Smart Board into the classroom according to Kähkönen and Pollari. Another teacher thought that multiple Smart Boards are good because of the size of the classroom, in which case everyone can see the instructions the teacher presents through the Smart Boards that are placed in different sides of the classroom. Also, the group sizes in the target school can be very large in high school levels, hence, the importance of visibility increases remarkably.

As mentioned previously in chapter 3, classrooms in schools today should offer more opportunities to information gathering and enable interaction with peers (Perusopetuksen opetussuunnitelman perusteet 2014, Lukion opetussuunnitelman perusteet 2015). Thus, adding ICT and mobile furniture seems only a logical idea. Although some teachers valued the new furniture and the Smart Boards, they were not highly valued by other teachers. Surprisingly, almost all of the teachers had complaints about the furniture. Next, we are going to present the results that indicate negative opinions about the changes made in the modernized classroom.

Example T6 Laura: Pöydät on usein "erillään" toisistaan ja vinksin vonksin. -- eikä oppilaat voi edes istua määrätyille paikoilleen.
(The desks are often "apart" from each other and all over the place-- and the pupils can't even sit in their given places.)

Example T7 Laura: Joutuu sanomaan useimmin seiskoille, että älkää pyörikö ja liukuko tuoleilla.
(You have to say more often to the seventh graders that don't spin and roll with the chairs.)

Example T8 Sanna: Pöytien kulmikkuus on hiukan hankala asia, pöytien välillä saisi olla enemmän tilaa, kun oppilaiden kamppeetkin ovat siellä, tulee ison ryhmän kanssa ahdasta ja opettajan tulee oltua enempi luokan etuosassa.
(The angularity of the desks is a little tricky thing; there should be more space between the desks because the pupils' stuff is also there, so with a big group it becomes crowded and then the teacher is more at the front of the class.)

Example T9 Marjo: Sohvat ja useampi smarttitaulu hymyilyttävät. Isojen ryhmien kanssa ei paras mahdollinen tila (ilmanvaihto, liikkumismahdollisuus).
(The sofas and many smartboards make me smile. With big groups it's not the best possible space (ventilation, room to move).)

Example T10 Sanna: –pöytiä järjestelemällä saa tietysti hauskoja ryhmittelyjä, mutta se ei sinänsä ole ratkaisevaa käsillä olevan oppimistehtävän ratkaisemiseksi.
(-- by organizing the desks you can of course get nice seating arrangements, but that is not crucial, as such, in solving the learning tasks at hand.)

The teachers seemed to be dissatisfied with the desks and chairs that were chosen into the new learning space. Teachers reported that the furniture, and especially the wheeled chairs, cause restlessness and disturbance amongst students. Also, it is not possible to place the non-rectangular tables in neat lines like the traditional desks usually found in schools, in which case the classroom might seem messy and bring restlessness into the learning space. At least one of the teachers seemed to appreciate order and clarity in the classroom, which made her dislike the desks and chairs. Originally, the idea behind the non-traditional desks and movable chairs was that they make the space more variable and enable re-grouping the desks more easily and conveniently when performing, for example, group work (Kähkönen and Pollari 2015). One of the teachers has realized this (example T10), but quite interestingly, does not seem to consider it to be that important. We could perhaps argue that Sanna does not use the kind of learning tasks in her teaching that demands group work.

Results received from the student survey support the assumption that the teachers do not take advantage of the possibilities the new furniture might bring. When students were asked

if the furniture arrangements vary in the modernized and the traditional classrooms, there was not a statistically significant difference between the responses received in the two classrooms. In fact, the mean values received in both classrooms were close to 1.5, which indicates that the seating arrangements remain constantly the same regardless of the location of the lesson according to the students (see table 5). Furthermore, students also disagreed with the statement on the use of the special furniture found at the back of the modernized classroom. Reasons for such results can only be speculated since the teachers did not specifically address the issue in their responses. Sanna's comment on example 10 indicates that she does not find the seating arrangement to be an important factor for completing tasks. Perhaps other teachers feel the same way: furniture and seating arrangements are not key elements for language learning.

The majority of respondent teachers had complaints about the cramped conditions of the space. However, the modernized classroom is one of the few big classrooms in the target school and it needs to have a capacity for large groups of high school students that cannot fit into smaller classrooms. Because the classroom must have enough desks and seats for a larger group of students, the furniture takes up a lot of space, no matter what their shape is. Thus, the classroom might feel too packed and changing the furniture probably would not affect the cramped conditions in any way.

As mentioned earlier, some teachers were happy about the increased technology and new devices while others found the final outcome dissatisfying.

> **Example T11** Sanna: En ehdi tällä hetkellä pohtia kolmen smart-taulun hyötyjä, en myöskään pidä smart-tauluja tai niitä operoivia paneeleja välttämättä kovin sujuvana käyttöliittymänä, eikä smartti lisää koko ryhmän aktiivisuutta, vain sen kuka käyttää taulua milloinkin.
> (I don't have the time at the moment to ponder the benefits of having three Smart Boards; I also do not consider the Smart Boards or the panels that operate them to be very good interfaces; and a smart board does not increase the activity of the whole group, only the one who uses it at that time.)
>
> **Example T12** Jenni: Hyvä, että laitteita on. Kiva olisi, jos aina toimisivat.
> (It's good that we have devices. It would be nice if they'd always work.)

There were severe technical problems with the devices for quite a long time after the completion of the renovation (see chapter 4), which is probably the reason for Jenni's ironic comment above (Example T12). In addition to Sanna's comment above, she also mentioned in

the survey that the technical problems affected negatively to the novelty value of the modernized classroom. Apparently, the problems still occur more or less, because it emerged from several responses. Nowadays, teachers are fairly dependent on technology since large part of teaching is done by using different technological devices. Thus, it is possible that poorly functioning devices have had an effect on teachers' perceptions on the modernized classroom as a whole and not only towards the technology in the space. Sanna also brought out her opinion on Smart Boards not being very innovative solutions relative to teaching. This may be due to the fact that in the target school, each classroom typically has a Smart Board, and consequently the device has become conventional for the teachers. The innovative idea was to install several Smart Boards into the modernized classroom, but from Sanna's point of view, it was not inventive enough. She did not, however, suggest any alternative devices that could be used in teaching.

Overall, the teachers' responses indicate that they do not appreciate the physical features of the modernized classroom very much. The responses revealed a lot more negative than positive aspects in the changes made during the renovation process. Furthermore, the positive opinions mainly focused on minor details such as the wireless headphones and the use of colors in some of the furniture. The bigger changes (e.g. movable furniture and Smart Boards) did not get much support from the teachers.

6.1.2 Teachers' views on the pedagogical effects of the modernized classroom

The second theme to be examined is the pedagogical effects of the modernized classroom that were one of the key interests of the present study. We asked the teachers whether the modernized classroom affected their teaching methods or tasks that they chose or created for their students. According to the teachers who planned the renovation of the classroom, the furniture and ICT enable implementing new pedagogical solutions into language learning and teaching (see chapter 4.2). Since constructivism is highly evident in current educational change (Perusopetuksen opetussuunnitelman perusteet 2014, Lukion opetussuunnitelman perusteet 2015), it is expected that the use of constructivist teaching and working methods are increasing.

Next, we are going to present the teachers' answers regarding the possible effects of the modernized classroom on their teaching styles and methods.

Example T13 Laura: En käytä erilaisia työskentelytapoja tai opetustyylejä eri luokissa.
(I don't use different working methods or teaching styles in different classrooms.)

Example T14 Sanna: Mielestäni luokkatilan perinteisyys ei tarkoita että opetus on perinteistä.
(In my opinion, having a traditional classroom doesn't mean that teaching needs to be traditional.)

Example T15 Sanna: -- emme varsinaisesti ole myöskään keksineet erityisesti juuri tuohon tilaan omaa pedagogiikkaa, siihen ei ole kaiken kiireen keskellä ollut juuri aikaa enkä näe [sitä] edes tarpeellisena. Ulkonaiset puitteet ovat viihtyvyyteen vaikuttava asia, oppimiseen vaikuttaa moni muukin asia.
(-- we haven't really invented a specific pedagogy for that space; we haven't really had time for that in all this rush and I don't even consider [it] to be necessary. The physical features affect the level of comfort; there are many other things affect learning as well.)

Example T16 Marjo: Oma opetustyyli ei sinänsä ole paikkasidonnainen. Työskentelytavat eivät ole ehkä myöskään kehittyneet paikan mukaan rentoutta ja improvisatorisia ratkaisuja lukuunottamatta.
(My own teaching style, does not depend on the space. The working methods may not have developed along with the space apart from a relaxed atmosphere and improvisatory decisions.)

Example T17 Jenni: Työskentelytapoihin vaikuttaa jonkin verran [moderni luokkahuone]--toiminnallisia juttuja alkaa heti miettimään.
(It [modernized classroom] somewhat affects to the working methods --you immediately start to consider action-based tasks.)

Based on these responses, the learning environment does not affect teachers' teaching styles or methods in any way. They seem to have their own established ways of teaching, which are relatively stable regardless of the location they teach in. According to Marjo (example T16), the classroom's potential is visible only when something unplanned happens and she has to improvise. However, Marjo's response is quite difficult to interpret. She may think that the modernized classroom allows her to do rapid changes in the lesson plan more easily than a more traditional classroom. However, she did not elaborate on the subject any further, thus we cannot be certain if the improvisation occurs only in the modernized classroom or whether the learning space has affected her overall teaching habits in a way that has made her feel confident to do rapid changes during lessons. One teacher mentioned that the classroom slightly affects the working methods and the tasks she plans for the lessons (example T17). If the lesson is located in the modernized classroom, she might add action-based tasks into her lesson plan but otherwise, the classroom does not have an effect on her teaching, either.

Considering the money and time spent on the classroom's renovation, improvisation and occasional incorporation of action-based tasks seem to be too slight changes brought about by the modernized classroom into the teachers' pedagogy.

All in all, the teachers seem to use the same pedagogical choices in the modernized classroom and in a more traditional classroom. A thought comes to mind whether the teachers already have very advanced and modern teaching practices that they do not feel they need modern learning environments in the implementation of modern pedagogy. In chapter 4, it was mentioned that the target school differs from a typical Finnish school by its close connection to the local university. Thus, we might well think that the teachers are particularly advanced in their work. However, as said in chapter 2.3.1, teachers need to adapt to the new learning environment and possibly change their teaching methods in order to make the most of the new environment and offer teaching that suits better to the purposes of the modern education. Currently, it seems that teachers are not willing to adapt to the new learning environment. On the contrary, the classroom is expected to adjust to the teachers' customary teaching habits.

Our results are in line with a previous study by Toikka (2015) who studied the impact of a new school building on tachers' means of operation in the new facilities through a survey answered by 15 teachers of the school. According to his study, the new learning environment did not have much impact on the pedagogy: the teachers did not collaborate more than in their old school building and the amount of technology used by students did not increase. Toikka explains the results with a lack of involvement by teachers in the designing process of the school building. If architects alone are in charge of school design, the new learning environment will not have a notable impact on the pedagogy and the new pedagogical possibilitites the environment has may be neglected. If teachers got to be more involved with the design process, it might increase their feeling of ownership towards the project, which might movitate teachers to think about their means of operation. The modernization of the classroom in our study was conducted by two foreign language teachers who were purposely left out of our research. Hence, none of the teacher respondents of our study were involved in the renovation process, which may be one of the reason for the nature of their responses. However, we did not ask them about the matter so all of this is pure speculation.

Another reason for the fact that nothing has changed in the teachers' teaching habits or tasks that they present during the lessons can possibly be explained by the following comments, as well:

> **Example T18** Sanna: [Moderni] luokka ei ole sen kummempi kuin muutkaan, se ei varsinaisesti ainakaan vielä ole mitenkään erilainen oppimisympäristö kuin muutkaan luokat.
> (The [modern] classroom is no different than others; it isn't, at least not yet, any different learning environment than other classrooms.)
>
> **Example T19** Sanna: Muissa luokissa voi opettaa aivan yhtä monipuolisesti kuin modernissa luokassa, sikäli kun käytössä vain on oppilaille tarvittaessa koneita tai padeja.
> (You can teach as versatilely in other classrooms as in the modern classroom, as long as there's computers or tablets for pupils if necessary.)
>
> **Example T20** Marjo: Uudistetun luokkahuoneen mahdollisuudet ovat suuremmat kuin mitä toteutus tällä hetkellä antaa ymmärtää. Lähinnä luokan mahdollisuuksia tulee käytettyä improvisoiden tunnilla esiin tulevien tarpeiden mukaan.
> (The potential of the renovated classroom is much greater than what the implementation suggests at the moment. The possibilities of the classroom are mainly used when improvising according to the possible needs emerging during a class.)
>
> **Example 21** Marjo: [Uudistettu] luokka on edelleen aika perinteinen luokkahuone. Itse innostuisin enemmän avarammasta tilasta, jumppapalloista istuimina jne.
> (The [modernized] classroom is still quite a traditional classroom. I would actually get more excited about a broader space, exercise balls as seats etc.)

The participants provided quite strong opinions regarding the issue. Unfortunately, some of the respondent teachers do not consider the renovated classroom to be that modern after all. In their opinion, the modernized classroom is mainly the same as any other classroom in the target school. This confirms our hypothesis mentioned in chapter 4.1 in which we express our skepticism by stating that we do not believe the modernized classroom to be that different compared to other classrooms in the target school. Our opinion is that the classroom needs to be noticeably different in order to change the teachers' pedagogy and teaching habits. The comments above indicate that there are not that many modern elements in the modernized classroom and Marjo, for example, expressed her desire for more innovative furniture, such as exercise balls. Two other teachers who answered the questionnaire did not take a stand on this issue. Therefore we do not know whether they share the same opinion with these teachers.

6.2 Teachers' preferences for the classroom of their English lessons

Lastly, we were hoping to find out which classroom was better according to the respondent teachers. In the questionnaire, teachers were asked whether they would prefer teaching in the modernized classroom or in a more traditional classroom. Their answers were as following:

> **Example T22** Laura: Perinteisessä [luokassa], koska modernin luokan pulpetit ovat usein epäsiistissä järjestyksessä ja pyörivät tuolit aiheuttavat levottomuutta.
> (In the traditional [classroom] because in the modernized class, the desks are often disorganized and the rotating chairs cause restlessness.)

> **Example T23** Marjo: Ihan rehellisesti sanottuna ei suurta merkitystä, kunhan laitteet TOIMII, sisäilma ok ja tilaa liikkua jne.
> (To be honest, it doesn't really matter as long as the devices WORK, indoor air is ok and there's room to move around etc.)

> **Example T24** Sanna: Asialla ei ole merkitystä itselleni, perinteiset luokat ovat ehkä hiukan ahtaita jopa yläkouluryhmälle.
> (It has no significance for me; the traditional classrooms are perhaps a little bit too cramped even for a junior high school group.)

> **Example T25** Jenni: Moderni luokka, enemmän mahdollisuuksia.
> (The modern classroom, more opportunities.)

As the excerpts show, one teacher was clearly in favor of a more traditional classroom (example T22) as for one teacher supported the modernized classroom (example T25). Two teachers claimed that they did not really care in which classroom they taught. However, since Sanna says in example T24 that the traditional classrooms are too cramped, we might assume that she prefers the modernized classroom. Furthermore, Marjo claims that she does not have a preference for the location of her lessons but she presents a few criteria that should be met in a good classroom (functioning devices, indoor air of a good quality and enough room to move). However, in another response, Marjo mentions the same criteria to be the disadvantages of the modernized classroom:

> **Example T26** Marjo: Moderni luokka on aika täyteen ahdettu, joten tilaa liikkumiseen on hintsusti. Sisäilma on välillä tunkkainen. Tekniikka ei pelitä.
> (The modernized class is pretty cramped so there's only a little bit space to move around. Indoor air is stuffy sometimes. Technological appliances don't work.)

Taking this into account, Marjo is clearly leaning towards the traditional classroom. The excerpt above invalidates her previous argument that the classroom does not matter to her, in

which case, we can come to the conclusion that two teachers would choose the traditional classroom and the two others would choose the modernized classroom. Jenni was the only respondent who would choose the modernized classroom for pedagogical reasons. Laura's choice was based merely on the replaced, "poor", furniture, which seems to take all of her attention in the classroom. The two other teachers' choices were based upon factors that are difficult to change with a modernization, for instance, the lack of space or the quality of air. For these reasons, it is quite easy to see that the modernization of a classroom in the target school was not very groundbreaking to most of the respondent teachers.

In Chapters 5 and 6, we have reported the results of the two surveys conducted for the present study. Based on the results, it seems that the students appreciate the modernized classroom more than the traditional classroom. The physical features in the modernized classroom, such as adjustable furniture and sofa sets, were clearly better than the traditional school desks and chairs the students have been used in other classrooms. The teachers, however, did not find any significant differences between the modernized and a more traditional type of classrooms. Therefore, they use the modernized classroom almost exactly the same way as any other classroom in the target school. In the next chapter, we will summarize the most relevant findings of our research, present possible explanations to the results and give answers to our research questions.

7 DISCUSSION

The main purpose of this study was to find out students' and teachers' perceptions on their renovated language classroom. This was done by conducting separate surveys for teachers and students who used the classroom at the time of data gathering. The student responses were compared to a group of students who answered the student survey in a more traditional classroom where they were studying English at that time. The theoretical basis of the student survey lay on the theories of learning environment and the physical, psychosocial and pedagogical features of learning environment. The survey for teachers was designed to get answers concerning teachers' overall opinion about the modernized classroom as well as the classroom's effects on language learning and teaching. The theoretical basis to which the teachers' survey results were compared was on constructivism due to its strong presence in

the renewed Finnish curricula. In this chapter, we will summarize the findings and analyses concerning research questions one and two. The third research question will also be discussed more extensively by connecting the views of students and teachers together.

7.1 The superiority of the modernized classroom from its physical, psychosocial and pedagogical features compared to the traditional classroom according to the students

The first research question focused on the physical, psychosocial and pedagogical features of the modernized and the traditional classrooms. We wanted to find out if the modernized classroom is a better learning environment physically, psychosocially and/or pedagogically according to students. In order to find answers to the question, a student survey was conducted and the results were statistically analyzed.

Independent-samples t-tests showed that students favored the modernized classroom over the traditional classroom based on its physical, psychosocial and pedagogical features. The result was the clearest in the matter of physical features: the differences in the mean values were the highest between the statement groups and individual statements of the two classrooms and the results were statistically significant in the matter of statement groups and most individual statements. This is quite understandable because the most noticeable changes made in the classroom during renovation focused on the physical aspects, such as furniture, colors and technology. When looking at the photos of the two classrooms (Figures 3-6), the students' responses in the matter of physical features are not that surprising: the modernized classroom most likely looks more appealing in the eyes of the students. Furthermore, it is also probably easier to evaluate physical matters of an environment as opposed to social and psychological aspects. Judging the quality of chairs is simpler than assessing the level of safety, for example, which increases the general agreement among students thus affecting statistics. The more united the respondents were in the survey, the clearer and the more statistically significant the results.

Physical features were also the center of attention when students got to describe what a good English classroom would be like. A majority of students mentioned furniture in their comments one way or another. This indicates that students appreciate good furniture, which is only natural due to their somewhat constant use during lessons. In the renovation,

students' desks and chairs were changed in the classroom and additional furniture, such as a sofa and barstools, were also purchased, which may indicate that people furnishing the renovated classroom were aware of the importance of furniture for students. Unfortunately, based on our results, it seems that the additional furniture is not used much during English lessons in the school, especially among junior high school students. Perhaps teachers feel that using the special furniture may cause restlessness among the students and for the sake of peace and quiet, it is better to ask students to sit on their individual chairs. But how can students learn to behave nicely in different circumstances if they are not given the opportunity to learn proper behavior? As mentioned in chapter 3, physical learning environment can, on one hand, create opportunities and stimuli for learning and, on the other hand, restrict behavior. The additional furniture could be used during lessons to add new and more creative elements for learning and performing tasks, which might even affect students' motivation. Unfortunately, at the moment this does not seem to be the case in the target school.

The role of the physical features has also been evident in previous studies on learning environments. In a research by Piispanen (2008), the majority of students highlighted physical aspects when they were asked what makes a good learning environment. Students who took part in Piispanen's research were younger compared to our research so apparently the importance of physical aspects in a learning environment does not change with age. Also in Toikka's (2015) study, 68 per cent of students said that the classroom had an influence on their ideal learning environment for language learning. Among the most frequent responses Toikka received comments on furniture and colors, which was the outcome of the open-ended question about a good English classroom in our student survey, as well. All in all, it seems that physical features are important for students and in the light of physical learning environment the classroom modernization in the target school of our research has been a success according to the students.

Though the modernized classroom received better scores from the students in the matter of psychosocial and pedagogical aspects, as well, consensus among the students was not that clear. The differences in the mean values between the two classrooms were smaller and a closer look at the individual statements about the psychosocial and pedagogical aspects showed that the differences in the mean values were less often statistically significant though in favor of Classroom M.

Social and psychological phenomena in a learning environment are much more complex to describe than physical features, which had an effect on the nature of statements found in the survey. Most elements that are related to psychosocial features are not classroom-specific, which complicated the design of the statements for the survey. The statements concerning the psychosocial features were closely connected to students' individual feelings experienced in the classroom that might have been difficult for the students to separate from the overall feelings they experience in the entire school environment. For example, the levels of comfort and safety students experience in the school remain most likely the same among each person regardless of the location in the school area. Therefore, differences between the two student groups were less likely to occur in the responses.

However, students still appreciated the psychosocial aspects of the modernized classroom slightly more than that of the traditional classroom based on the statistics. Perhaps the positive attitude towards the physical features of the modernized classroom reflects on the psychosocial atmosphere of the classroom: students find the modernized classroom more appealing, which improves their overall attitude towards the room, as well. After all, the results were statistically significant and in favor of the modernized classroom in the matter of feeling joy when entering the classroom and feeling comfortable when being in the classroom. The statistics also showed that the students found the modernized classroom more motivating and English lessons in the modernized classroom more interesting. The last two remarks were found in the statements concerning pedagogy but can also easily be placed under psychosocial features. Feeling joy and comfort and the level of motivation and interest are naturally important factors of learning. The presence of such elements in a school suggests that the learning environment must be good psychosocially.

According to the results, students also valued the pedagogical features of the modernized classroom more than that of the traditional classroom. The difference in the mean values of the group statements between the classrooms were, however, extremely small. Moreover, only two individual statements, which were mentioned in the previous paragraph, received statistically significant results. Based on the results, it seems that the classroom does not have much impact on the nature of teaching.

Despite the fairly neutral results in the matter of psychosocial and pedagogical features of the classrooms, it can be stated that the classroom renovation had a positive outcome according

to the students. Students in the modernized room graded their classroom higher than their peers in the traditional classroom. Students in the modernized classroom were also less keen on changing the location of their English lessons or making any changes to their current classroom. All in all, it seems that Classroom M is a better learning environment than Classroom T according to the students and the results managed to wash away some of our scepticism towards the modernized classroom.

However, the survey's nature of comparison should be kept in mind and remember that the results only show the students' satisfaction with the modernized classroom compared to Classroom T. Based on our results and our methods of study we cannot predict the results if the modernized classroom had been compared to some other classroom in the school, let alone the entire school building. If we had wanted to solve students' opinion on the modernized classroom compared to all possible classrooms in the school, we should have conducted our research with different methods due to possible problems with interpretation of the results. An interview of a small number of students, for example, might have worked better because the interviewee could have asked clarifying follow-up questions during the interview. Questionnaires, on the contrary, require simple questions or statements with as minimal amount of interpretation as possible required from the respondents during answering and the researcher during the analysis, which is why our survey ended up being the way it did. Also, we were hoping to find results that could be generalized to cover the entire student population of the school, which is why a student interview would not have worked. In the matter of generalization, the student survey reached its goals. The overall interpretation made based on the results can be generalized to cover the entire school population due to small p values received in the statistical analyses.

7.2 The potential of the modernized classroom to bring additional or new possibilities and increase the application of constructivism in language learning and teaching according to the teachers

The second research question concerned the effects of the modernized classroom on educational development. One of the aims of this study was to find out whether the modernized classroom increases the application of constructivism in language learning and teaching. Furthermore, we wanted to discover whether the respondent teachers take advantage of the classroom's potential for education. The results revealed that the

modernized classroom is, for the most part, used exactly the same way as any other classroom in the target school. One teacher reported that she "immediately starts to consider action-based tasks" but other respondent teachers use the classroom's potential only occasionally if at all. Other positive effects were not mentioned even though it was asked directly in the survey. On the contrary, we got several responses where the teachers reported that their teaching habits have not changed along with the modernized classroom. Furthermore, the respondent teachers reported that they do not teach differently in different classrooms.

In our opinion, the modern classroom is currently still very traditional, therefore, the teaching methods may also be quite traditional. After all, the students still mainly sit still in rows and do teacher-led assignments. As being mentioned before, teachers in the target school use several different classrooms for teaching English. Perhaps it is easier and less time-consuming for the teachers to plan their lessons in a way that allows them to give instructions and the students to complete their tasks regardless of the locations of the lessons. If one of the teachers had all her English lessons in the modernized classroom, her way of planning the lessons might change in time. Perhaps the teacher might end up being more creative with her lesson plans, exercises and seating arrangements if she got to spend most of her time teaching in that particular room.

Another reason for the teachers' lack of new pedagogical approachs may be their absence in the designing process of the renovation project. As mentioned in Chapter 2.3.1 by Veijola, people see their physical environment differently according to their previous experience. Perhaps, if the teachers had been more involved in the renovation process, they might have started to pay more attention to the changes made in the classroom and the possibilities it could bring to teaching. This idea is supported by Toikka (2015), who discovered in his study that a new school building did not have an impact on the means of operation among teachers. He believed that the reason for such a behavior was the lack of teachers' involvement in the design proces of the building.

Unfortunately, the respondent teachers also shared our view on the modernized classroom not being very modern or innovative. One reason for this can be the technical implementation which was not very successful in the classroom. There were major technical problems in the modernized classroom after its introduction. In the end, not that many changes took place in the classroom, which can be another reason for the fact that the renovated classroom is not

regarded as very modern among the teachers. For this reason, the respondent teachers may not consider the classroom to be so different that they would need to change their teaching styles. For example, if beanbags and standing workstations would replace the standard furniture, the teaching methods might change as well. This type of radical change would most likely direct teachers to use learner-centered and constructivist teaching methods.

Based on the teachers' results, the modernized classroom does not increase the application of constructivist teaching methods. However, the present study did not focus on examining the respondent teachers' overall teaching styles or philosophies. Therefore, we do not know whether the respondent teachers have already used constructivist techniques in teaching before the renovation of the modernized classroom. However, according to the responses, we can come to the conclusion that the modernized classroom has not affected the teachers' teaching styles at all and only in rare cases the room has had an effect on the learning activities and assignments that the respondent teachers present during classes. As mentioned in the previous chapter, it seems that the teachers feel the modernized classroom must adapt to the teachers' customary teaching methods even though it would be more important to use the various possibilities the classroom has to offer for the benefit of teaching. Although the final outcome of the modernized classroom is not very innovative and different compared to other classrooms in the target school, it is nevertheless more adaptive a space than any of the more traditional classrooms. Movable furniture easily facilitate the formation of different groups and special working areas at the back of the classroom are also good for group work and various projects. The technological solutions, mainly the three Smart Boards, enhance visibility and can be used for differentiation. However, results indicate that the teachers do not take advantage of these possibilities as much as they could.

7.3 What is the overall opinion on the modernized classroom according to both teachers and students?

The third research question concerned the overall opinion on the modernized classroom. Here, we will combine and compare the results of both study groups. The respondent students and teachers shared some views but the results also showed quite significant differences. The respondent teachers' opinion towards the modernized classroom was quite clear. They either did not like the changes made during the renovation of the classroom or did not think the modernized classroom was any different compared to other classrooms in the

target school. Especially the practical functionality of the furniture was considered quite poor. The respondent students, on the contrary, seemed to put more value to the modernized classroom than to the traditional classroom. The results indicate that they think that the two types of classrooms are, in fact, different compared to each other. We could argue that students appreciate the physical aspects and aesthetics more than teachers. The teachers seem to be particularly dissatisfied with the new chairs and desks whereas students clearly favored them over the furniture found in the traditional classroom. The students are, after all, the ones who use the furniture and perhaps pay more attention to aesthetic details, such as colors. Teachers do not use the desks and chairs in their work in which case they are not necessarily aware of the benefits that the furniture offer. Also, teachers may be so focused on teaching that they do not pay much attention to aesthetic factors. All in all, the results showed that the students paid more attention to the furniture found in a classroom and appreciated different types of seats whereas the teachers seemed to think that the furniture does not have an effect on their ways of teaching English, which probably caused students to feel that the seating arrangement does no vary often in the modernized classroom and the special furniture found at the back of the modernized classroom are not used much during English lessons.

In the matter of pedagogical approaches used in the modernized classroom, the teachers and the students shared a somewhat common opinion that the location of the English lesson does not have an effect on the way of teaching. Perhaps the modernized classroom still resembles too much a traditional classroom where students sit on their chairs behind desks with their school books open and the teacher stands in front of the classroom having a monologue next to a blackboard, which, in this case, has been turned into a Smart Board. If the teachers see the space as a typical classroom, it can be difficult to start thinking outside the box and develop new ways of teaching. Another, more positive, explanation for the results could be that the teachers are already being quite innovative and modern with their teaching methods. After all, the students clearly agreed with statements concerning the use of technology and the frequency of group and oral exercises in both classrooms. In the end, it can also be a good sign if there are no differences in the nature of teaching between different classrooms as long as the methods support modern, constructivist learning theories.

Despite the teachers' somewhat negative attitudes towards the modernized classroom, the students would much rather study in the modernized classroom than in the traditional

classroom. The overall trend throughout the results received from student survey was that the modernized classroom was more appreciated based on its physical, psychosocial and pedagogical elements. However, it must be kept in mind that the design of student and teacher surveys was quite different and also the methods of analyses differed quite remarkably. The student survey focused on comparing the modernized classroom with a specific classroom found in the school whereas the teachers answered their questionnaire without comparing the modernized classroom specifically to Classroom T. Hence, when the teachers answered the questions, they did not compare the modernized classroom with Classroom T, per se. Instead, they might have thought about some other classroom found in the school when answering the questions, which might have had an effect on their responses. Therefore, in the matter of students, we can unambiguously compare the results with Classroom T but with the teachers' response we cannot make the same assumption. However, it can be stated that the looks of Classroom T are quite similar to other classrooms where English is being taught in the target school, with the exceptions of Classroom M and the language lab. Hence, comparison between Classrooms M and T is also possible with teachers' responses.

Another important remark needs to be made concerning the results. Despite the positive results received from the students, we cannot make assumptions on the effects of the learning environment on actual learning outcome. Based on tour research, it is impossible to say whether the students learn English better in the modernized classroom compared to the traditional classroom. As being mentioned in the literature review, studying the effect of the environment on learning is extremely difficult due to the complicated nature of learning. Environment is only one factor among dozens of others affecting learning, which makes it utterly challenging to study the suitability of different environments for learning merely based on test results, for example. However, the students found the modernized classroom more motivating and English lessons in the room more interesting compared to the traditional classroom, which might indicate that the students actually learn more in the modernized classroom.

Along with the changes in society and job markets, it is evident and even preferable that the nature of learning and teaching will also go through a number of reforms in the present future. Therefore, the need for new types of learning environments will also increase and the trend of creating modern types of facilities for learning is already showing at least in Finland.

This is particularly evident in the target school of our research where different classrooms have been and continue to be renovated. At the time of our research, another classroom in the target school was being renovated for language teaching purposes, which may sound surprising considering the teachers' negative attitude towards the renovation made in Classroom M. Since it seems based on our results that the biggest advantage of the classroom renovation was the students' overall attraction towards the room and the most unfortunate result of the renovation being the non-existent effect of the renovation on pedagogy, it is reasonable to ask if the advantages of classroom renovations are big enough. If the goal of classroom renovations is to improve pedagogy and bring new opportunities into language learning and teaching, the renovation of the new classroom should be done differently than in Classroom M. Perhaps it would be wise take include a larger number of teachers involved in the design of the renovation and also ask students' opinions on the matter. Furthermore, it could be beneficial for the teachers to deeply consider what they want to teach and how and what type of facilities support the best learning outcome. After all, the classroom renovation is a process that should begin in the minds of teachers.

8 CONCLUSION

The aims of this study were to find out students' views on the physical, psychosocial and pedagogical aspects of a modernized language classroom compared to a more traditional classroom as well as teachers' perceptions on the modernized classroom's effect on language teaching. Furthermore, we wanted to know whether the renovated and modernized classroom promotes constructivism in language learning and teaching. Another priority was also to discover both students' and teachers' overall opinion about the modernized classroom in order to draw conclusions on the success of the renovated learning environment.

The results of the research showed that there was quite a contradiction between the students' and teachers' views. The students found the modernized classroom a pleasant place for learning considering the classroom's physical, psychosocial and pedagogical aspects. Students especially liked the physical aspects, such as, the sofa sets and the adjustable furniture in the modernized classroom whereas teachers mainly did not like the physical aspects that were

introduced after the renovation. However, teachers were quite unanimous that the wireless headphones used in listening tasks and multiple Smart Boards in the modernized classroom were somewhat helpful in teaching. The teaching itself, however, has not experienced major changes. Teachers' results showed that they teach the same way despite the classroom. Students' answers supported this view as well. The use of constructivist teaching methods had not increased noticeably among the respondent teachers after the renovation.

The overall opinion among the students was that they preferred the modernized classroom over a traditional one, which makes the classroom renovation a success from the students' point of view. However, the teachers seem to have a somewhat negative attitude towards the modern classroom due to the problems occurred with technology in the classroom. Furthermore, the teachers did not find the renovated classroom more modern in a remarkable way compared to other classroom found in the school. Perhaps this is also one reason why the pedagogy has remained the same: if teachers cannot see a difference between the characteristics of different classrooms, it is only natural to use the same principles for teaching regardless of the location of the lesson.

Though we were able to find answers to our research questions during the study, some issues could have been addressed differently. The limitations of this study need to be pointed out for possible further studies on the topic. The student questionnaire had some limitations that might have affected the results. The questionnaires were carried out to compare the modernized classroom and a specific traditional classroom instead of comparing the modernized classroom to traditional classrooms in general. Therefore, we might have received different results if some other traditional classroom had been chosen as the opposite of the modernized classroom. Furthermore, the results would have been different if the students had answered the questionnaire simply by picturing a more traditional classroom in their minds and compared the modernized classroom to that mental image. In that case, however, the interpretation of the results and their reliability would have diminished.

When students were asked questions about the psychosocial and pedagogical aspects of the classrooms, some of the questions might have been too difficult or abstract to understand. There was also a slight overlap with some of the questions in the students' questionnaire. Drawing the line between psychosocial and pedagogical aspects was somewhat artificial in the questionnaire from time to time. When asking students about the level of motivation, for

example, the statement could have been further categorized under both pedagogical and psychosocial elements. In the end, pedagogical and particularly psychosocial features are usually not classroom-related. Instead, the psychological and social factors tend to remain the same inside the entire school building, which probably affected our results.

In the matter of teacher survey, we did not get as much responses and information from the respondents than we had expected. Face-to-face interviews might have been a better approach with teachers in order to get more in-depth information. Fortunately, we got answers to our research questions but some of the teachers' responses were rather short whereupon the reasons for some of the answers remained unclear. Face-to-face interviews would have allowed us to ask clarifying questions. Due to the teachers' limited responses we were mostly in charge of the interpretation of their answers. Hence, the results should be viewed with caution, which, in the end, is quite a common downside of qualitative research.

As for more major limitations of the present study, other renovated classrooms in other schools should be studied in order to make stronger generalizations on the topic. Another classroom in the target school is being remodeled at the moment and it would be interesting to find out what is the outcome of the project. Because of the respondent teachers' rather negative attitude towards the modernized classroom, it would also be good to know what kind of modern classroom teachers actually appreciate. Since we are now moving towards more modern pedagogy, the teaching facilities should also follow the changes. Therefore, it would be vital to study the phenomenon from the teachers' point of view.

During our research project, it became evident that there is a lack of research on the impacts of learning environment on learning outcomes. Our research is no exception. The present study did not focus on finding answers to this issue. Hence, though the modernized classroom was a better learning environment according to the students, it is impossible to say whether students learn better in that classroom. Research on the subject can be fairly difficult to conduct due to its multidimensional nature. It would be extremely beneficial for the learning environment approach to find methods to study the impact of the environment on learning outcomes.

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APPENDICES

Appendix 1 – Students' questionnaire for Classroom M

*The student questionnaire was the same with Classroom T with the exception of statements 25 and 26 missing.

Mikä seuraavista vastausvaihtoehdoista sopii mielestäsi parhaiten väitteeseen?

1 = täysin eri mieltä
2 = jonkin verran eri mieltä
3 = jonkin verran samaa mieltä
4 = täysin samaa mieltä
5 = ei samaa eikä eri mieltä

	1	2	3	4	5
1. Tässä luokkahuoneessa on hyvin tilaa.	○	○	○	○	○
2. Tämän luokkahuoneen värimaailma on miellyttävä.	○	○	○	○	○
3. Tässä luokkahuoneessa on hyvät pulpetit.	○	○	○	○	○
4. Tässä luokkahuoneessa on hyvät tuolit.	○	○	○	○	○
5. Tässä luokkahuoneessa ei ole näköesteitä, jotka haittaavat oppituntien seuraamista.	○	○	○	○	○
6. Tässä luokkahuoneessa on tällä oppitunnilla hyvä istumajärjestys.	○	○	○	○	○
7. Tämä luokkahuone on moderni.	○	○	○	○	○
8. Tämä luokkahuone on mukava.	○	○	○	○	○
9. Tämä luokkahuone on hyvä paikka kielten oppimiselle.	○	○	○	○	○

Mikä seuraavista vastausvaihtoehdoista sopii mielestäsi parhaiten väitteeseen?

1 = täysin eri mieltä
2 = jonkin verran eri mieltä
3 = jonkin verran samaa mieltä
4 = täysin samaa mieltä
5 = ei samaa eikä eri mieltä

	1	2	3	4	5
10. Minä viihdyn tässä luokkahuoneessa.	○	○	○	○	○
11. Tähän luokkahuoneeseen on mukava tulla.	○	○	○	○	○
12. Minulla on tässä luokkahuoneessa turvallinen olo.	○	○	○	○	○
13. Tässä luokkahuoneessa opetusryhmässämme on hyvä työrauha englannin tunneilla.	○	○	○	○	○
14. Tässä luokkahuoneessa opetusryhmässämme on hyvä ilmapiiri englannin tunneilla.	○	○	○	○	○
15. Englannin opettajani huomioi minut tässä luokkahuoneessa.	○	○	○	○	○

Mikä seuraavista vastausvaihtoehdoista sopii mielestäsi parhaiten väitteeseen?

1 = täysin eri mieltä
2 = jonkin verran eri mieltä
3 = jonkin verran samaa mieltä
4 = täysin samaa mieltä
5 = ei samaa eikä eri mieltä

	1	2	3	4	5
16. Tässä luokkahuoneessa käytetään usein hyväksi teknologiaa englannin tunneilla (Smart-taulut, iPadit, älypuhelimet, internet).	○	○	○	○	○
17. Tässä luokkahuoneessa tehdään usein pari- tai ryhmätöitä englannin tunneilla.	○	○	○	○	○
18. Tässä luokkahuoneessa tehdään usein suullisia tehtäviä englannin tunneilla.	○	○	○	○	○
19. Tässä luokkahuoneessa vaihdetaan usein pulpettien järjestystä englannin tunneilla.	○	○	○	○	○
20. Tässä luokkahuoneessa pidettyjen englannin tuntien sisältö vaihtelee.	○	○	○	○	○
21. Tässä luokkahuoneessa pidetyt englannin tunnit ovat mielenkiintoisia.	○	○	○	○	○
22. Tässä luokkahuoneessa opiskellaan englantia usein ilman oppikirjoja.	○	○	○	○	○
23. Tässä luokkahuoneessa joudun poistumaan usein omalta istuinpaikaltani tehtävän tekemistä varten englannin tunneilla.	○	○	○	○	○
24. Tämä luokkahuone motivoi minua oppimaan.	○	○	○	○	○
25. Tässä luokkahuoneessa on usein käytössä kaksi Smart-taulua samanaikaisesti englannin tunneilla.	○	○	○	○	○
26. Tämän luokkahuoneen perällä olevat istuinpenkit ja sohva ovat usein opetusryhmämme käytössä englannin tunneilla.	○	○	○	○	○

Mikä seuraavista vastausvaihtoehdoista sopii mielestäsi parhaiten väitteeseen?

1 = täysin eri mieltä
2 = jonkin verran eri mieltä
3 = jonkin verran samaa mieltä
4 = täysin samaa mieltä
5 = ei samaa eikä eri mieltä

	1	2	3	4	5
27. Englannin tunnilla viihtymisen kannalta minulle on merkitystä sillä, missä luokkahuoneessa oppitunti pidetään.	○	○	○	○	○
28. Haluaisin, että englannin tuntimme pidettäisiin jossain muussa luokkahuoneessa.	○	○	○	○	○
29. Haluaisin, että tämä luokkahuone olisi erilainen kuin nyt.	○	○	○	○	○

Minkä arvosanan antaisit tälle luokkahuoneelle?

○ 1 Huono

○ 2 Välttävä

○ 3 Keskiverto

○ 4 Hyvä

○ 5 Erinomainen

Millainen mielestäsi pitäisi luokkahuoneen olla, jotta se olisi mahdollisimman hyvä paikka englannin oppimiselle? Anna mielikuvituksesi lentää ja kerro ideasi.

Sukupuoli

○ Tyttö

○ Poika

Luokka-aste

○ 7. luokka

○ 8. luokka

○ 9. luokka

○ Lukio

Englannin opettajasi tällä hetkellä

○ Anne Haaranen

○ Tiina Huohvanainen

○ Anna Linnakylä

○ Pirjo Pollari

○ Leea Rossi

○ Maria Tupala

○ Luvi Viertola

○ Laura Ylä-Outinen

Appendix 2 – Teachers' questionnaire

JYVÄSKYLÄN YLIOPISTO
UNIVERSITY OF JYVÄSKYLÄ

1. Kuinka monta vuotta olet toiminut opettajana? *

○ Alle vuoden

○ 1-5 vuotta

○ 5-10 vuotta

○ Yli 10 vuotta

2. Mitä asioita pidät kielenopettamisessa tärkeinä?

_____

_____

_____

3. Mitkä asiat ovat luokkahuoneessa tärkeitä? (yleisesti ja/tai erityisesti kielenopettamisen kannalta)

_____

_____

_____

4. Mitä ajatuksia sinulle tulee, kun huomaat, että sinulle on merkitty opetustilaksi luokkahuone 3016?

_____

_____

_____

5. Vaikuttaako tuntisuunnitelmasi tekoon se, pidetäänkö tunti luokassa 3016 vai jossakin muussa luokkatilassa? Jos vaikuttaa, niin miten?

_____

_____

_____

6. Käytätkö erilaisia työskentelytapoja tai opetustyylejä luokassa 3016 verrattuna perinteisempään luokkaan? Millaisia?

_____

_____

_____

7. Onko opetustyyliisi tai opetusfilosofiaasi yleisesti ottaen vaikuttanut se, että olet opettanut luokassa 3016? Millä tavalla?

_____

_____

_____

8. Millainen rooli opettajalla on luokassa 3016 verrattuna perinteiseen luokkatilaan?

_____

_____

_____

9. Tuoko sinusta luokkahuone 3016 lisää mahdollisuuksia kielen opetukseen ja oppimiseen? Jos tuo, niin millaisia?

_____

_____

_____

10. Jos saisit valita, pitäisitkö opetustuntisi luokassa 3016 vai perinteisessä luokassa? Perustele valintasi.

_____

_____

_____

11. Oletko jakanut ideoita tai keskustellut luokan 3016 käyttämisestä toisten opettajien kanssa?

_____

_____

_____

12. Kerro vapaasti mitä mieltä olet luokasta 3016? (Kerro esimerkiksi kolme hyvää ja kolme huonoa asiaa)

_____

_____

_____