Teachers' Perceptions on Using ICT Tools in Teaching and Learning process: An Example of Northern Cyprus Secondary Schools

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Submitted to the
Institute of Graduate Studies and Research
in partial fulfillment of the requirements for the degree of

Master of Science
in
Information and Communication Technologies in Education

Eastern Mediterranean University
January 2018
Gazimağusa, North Cyprus

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ABSTRACT

Information, Communication, and Technologies have become extremely common within a very short period of time, known one of the basic building blocks of modern society. Integration of ICT will assist teachers to the global requirement to replace traditional teaching methods with a technology-based teaching and learning tools and facilities. The study aimed at investigating the extent of Information and Communication Technology (ICT) consumption in teaching and learning, examining the effectiveness of ICT in teaching and learning and finally establishes the factors which restrict the use of ICT in teaching and learning by teachers in secondary schools in Northern Cyprus.

In this research, data is collected via quantitative method. A descriptive survey design was implemented for this study. A convenience sampling method is carried out to collect data. A questionnaire was delivered to 182 teachers of secondary schools. The collected date were analyzed through SPSS (Statistical Package for the Social Sciences).

The results of this research show that most of the respondents view a high level of importance on their attitudes towards implementing ICT. In addition, a high level of awareness is reported in teachers in secondary schools displaying higher responses in their level of the ICT usage.

Furthermore, the study distinguishes different opinions between male and female teachers in regards to ICT allowing students to be more creative and imaginative. There are also significant dissimilarities of secondary school teachers on their

opinion perceptions on being confident with ICT and also in response to students learning more effectively by the consumption of ICT for instructing and learning purposes. However, the result of study indicates that there is not significant differences among teachers' perceptions according to their age, gender and teaching experience.

Keywords: Information and Communication (ICT), Teachers' Perceptions, ICT effectiveness, Teaching and Learning, secondary schools, Northern Cyprus

ÖZ

Bilgi ve İletişim Teknolojileri kısa bir sürede, büyük ölçüde yaygınlaşarak modern toplumun temel taşlarından biri haline gelmiştir. BİT kullanımının eğitime entegre edilmesi, öğretmenlerin, geleneksel eğitim yöntemlerinin yerini alan ve teknoloji temelli eğitim, öğretim araçları ile olanakları sunan evrensel gereksinimlere ulaşmasına destek sağlamaktadır. Bu çalışma, Kuzey Kıbrıs'ta bulunan ortaokullarda görev yapan öğretmenlerin katılımıyla, eğitim ve öğretimde Bilgi ve İletişim Teknolojileri'nin (BİT) tüketimini, etkisini ve son olarak BİT kullanımını sınırlayan faktörleri araştırmayı amaçlamaktadır.

Bu araştırmada kullanılan veriler nicel yöntemlerle toplanmıştır. Çalışmada, betimleyici bir anket tasarısı uygulanmıştır. Verileri toplamak amacıyla uygun örnekleme yöntemi kullanılmıştır. Ortaokullarda eğitim veren 182 öğretmene anket ulaştırılmıştır. Toplanan veriler ise SPSS (Statistical Package for theSocialSciences) yazılımı aracılığıyla analiz edilmiştir.

Çalışmanın bulguları, katılımcıların çoğunun BİT kullanımına yönelik tutumlarına yüksek seviyede önem verdiğini göstermektedir. Buna ek olarak, daha yüksek seviyede BİT kullanımına dair yanıt veren ortaokul öğretmenlerinde daha yüksek düzeyde farkındalık gözlemlenmiştir.

Ayrıca bu çalışma, BİT kullanımının öğrencilerin yaratıcılığı ve hayal gücü üzerindeki etkisiyle ilgili olarak erkek ve kadın öğretmenler arasındaki farklı görüşleri de ortaya çıkarmıştır. Elde edilen bulgulara göre, öğretmenlerin BİT kullanımında kendilerine duydukları güvenle ilgili algılarında farklılıklar

gözlemlenmiştir. Ders ile öğrenim amaçlarına yönelik BİT kullanımının, öğrencilerin öğrenmesinde daha etkili olduğu konusundaki görüşlerde de farklılıklar gözlemlenmiştir. Ancak, öğretmenlerin görüşlerinde yaş, cinsiyet ve eğitmenlik deneyimine göre belirgin bir fark gözlemlenmemiştir.

Anahtar Kelimeler: Bilgi ve İletişim Teknolojileri (BİT), Öğretmen Algısı, BİT etkililiği, Eğitim ve Öğretim, ortaokul, Kuzey Kıbrıs.

DEDICATION

I dedicate this work to my family and friends for their support and guidance all through my studies.

ACKNOWLEDGEMENT

I thank Allah for giving me the strength and potential to continue and effort to complete this thesis.

I would like to record my deep gratitude to my master thesis supervisor Prof. DR. Mustafa Ilkan for his support, advice, and guidance of this work as well as he spent a lot of time to help me how to write a thesis, how to collect data and how to analyze data. And also I would also like to thank Assoc. Prof. Dr. Ersun İşçioğlu for his support and guidelines.

I would also like to thank my Examining Committee Prof. Dr. Oğuz Serin, Assoc. Prof. Dr. Ersun İşçioğlu and Prof. DR. Mustafa Ilkan for spending time to read this thesis and supplying useful suggestions about this work.

I would also to thank my all members of ICT department. My special thanks go to all classmates and friends in ICT department who supported and encouraged me all of the time of my studies.

Last but not least the significant, my special thanks go to my family which includes my parents, sisters, and brothers for their support and motivation through my life, without their encouragement it is complicated for me to finish may master and graduate.

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Chapter 1

INTRODUCTION

The fundamental aim of teaching-learning processes is to equip students with skills to learn information vital for practicing in the occupation industry and earning a living for themselves, as well as to help people become resourceful citizens, which contribute to society. In earlier societies, learning behaviors were carried out in accordance with socially accepted standards and were reluctant to evolve, instead conforming with traditional norms. Whether teaching-learning processes are successful or not highly depends on the extent of interaction and communication between the teachers and the learners (Woolfolk, 2004). Teaching and learning is closely related and go hand in hand with one another. As humans are unique, different people learn best via different techniques. Each individual student should have the freedom and independence to find their own learning path, which requires individual attention, initiative, and self-education, following what best suits them rather than being forced to fit in the stereotyped and outdated education system. Modern perspectives argue that success is greater when the student is encouraged to work independently, realizing their own potential and making steps to reach their goals, planning their tasks themselves and being able to freely share their opinions with their teachers. In modern teaching-learning practices, teachers act as a source of guidance and counsel students to encourage formation of their own path, without dictating or spoon-feeding students ideas (Kochar, 1992).

Information and communication technologies (ICTs) are integrated into our normal daily routine and requirements. Over a period of the past twenty years, the use of ICT has profoundly transformed the approaches and methods of most forms of enterpriseamongstindustries of business and government. The field of education has long been deemed as a very socially driven industry. There has also always been a high correlation between the qualities of education with the high level of personal contact with the students. ICT encourages the likelihood of a more student-centered approach of learning in an educational setting. As we accelerate into an era of digital media and information, the purpose and aim of ICT in education become even more of importance of which will continue to expand and improve every day (Safdar& Behlol, 2011).

ICT has contributed trem endously in the advancement of education in both developed and developing countries. ICT has also transformed the teaching and learning method by re-assessing the roles of teachers and learners. ICT has become one of the most important tools in constructing the new world economy and is responsible for creating vast changes in society. Its range and exposure is extraordinary in human society due to the ease of admission to a vast amount of information, communication and knowledge. New ICT tools and processes have altered and improved the way the people communicate resulting in vast transformation infields such as industry, agriculture, medicine, business and engineering. ICT has the scope to renovate the philosophy of education, teaching approaches, and the position of students and teachers in the learning process. ICT can be perceived as the technological devices and resource tools that are used to communicate, create, allocate, store and also handle data (Solaimani, Keijzer-Broers, & Bouwman, 2015). ICT is the electronic method for searching for, using, archiving

and interacting information. The consumption of ICT in the classroom is vital for both the instructor and the student as it encourages both parties to participate in interactive learning, taking responsibility of learning and research, particularly if the learning is taking place online with location differences and physical distances. Such advantages also encourage students and teachers to continue using ICT outside of set learning hours to improve their knowledge or lesson planning (Guma, Haolader& Khushi, 2013).

ICT is the most important rapidly trending area responsible for shaping the global economic market and creating vast reformations and improvements in society. ICT has the potential to modify the way that individuals acquire, communicate and share information, This growth has resulted in a demand in advanced updated academic requirements as well as teaching methods and strategies which modern teachers of today implement. In order for successful learning to take place, teachers must display awareness and mindfulness, recognizing behavior and being able to include modern technologies into instructional procedures (Jang, 2010).

It is undoubted that the consumption of the latest technology in the classroom increases the success of the quality of teaching and learning. However, it is also a fact that the consumption of ICT is restricted in schools and educational institutions. In a modern educational approach, ICT has gained popularity for assisting handicapped learners. With the assistance of technology, the learning environment may be enhanced for disabled learners. ICT removes barriers and obstructions to make teaching and learning effective. In mainstream syllabuses, such as secondary school education subjects; English, Science, Mathematics etc., instructors are required to use ICT. The materials produced for teaching these subjects vary from

online games to teachers preparing quizzes, posting them to an online educational database where students can access, take tests and receive feedback from their teachers. Due to this advancement in technological education designs, the education system is encouraged to integrate new teaching processes, which include technology into their curriculum (Zhang, Yang, Chang, & Chang, 2014). Therefore, due to this irreversible evolution, schools and other educational institutions have a responsibility to prepare both teachers and learners to survive in a rapidly technological changing environment (Ghavifekr, Afshari& Amla, 2012).

While ICT integration in education aspires to develop and escalate the value, availability and economic affordability to delivering the lesson to students, it also represents the advantages of bringing to gather learning communities from all over the world in one place and at one time (Albirini, 2006). The inclusion of ICT is not an easy or straight forward act. On the contrary, it is complied of continual and repeate drevolutions that enhance the teaching, acquisition of knowledge and enrich resources(Young, 2003). ICT usage in education signifies teaching and learning processes that have been integrated with the use of educational technologies in educational institutes. Due to the fact that learners are already acquainted with technology outside of educational environments, for entertainment such as tablets and laptops using programs such as social media, they learn better within a technology-based environment because they are accustomed to it.

The implementation of ICT in the classroom is of key importance. This is because the use of modern methods in education enhances the pedagogical development of students. Therefore, the application of ICT will lead to a greater success of learning with assistance from ICT features and processes (Jamieson-Proctor et al., 2013). ICT

supports both instructors and learners where successful learning takes place with the help of hardware devices such as computers and tablets to fulfill the aims of learning aids (Jorge, 2003). Computers and technology should not be perceived as replacing teachers for quality teaching but instead should be considered as an additional supplement required for more interactive and positive teaching and learning.

The requirement to implement ICT into education is not only more successful but also serves the purpose of being more economically and timely efficient. Together with the assistance of technology, instructing and knowledge acquisition is not only restricted to the school building. Nowadays, it is quite common to set up a learning environment over the Internet across different countries. It is not necessary to be physically in the same place as the instructor. This key advantage has opened up many doors and markets such as online courses, one-to-one tuition and seminars for students across the world. The ICT educational processisnot a single stage, rather it is an ongoing procedure, which results in an interactive instructing and learning setting (Young, 2003). ICT may be applied in different paths assisting both instructors and learners to study and develop their individual specialized areas. An ICT assisted teaching and learning program includes a variety of interesting and attractive aspects including educational programs, interactive games and competitions, information storage, the usage of databases, brainstorming, music and the Internet which will result in the procedure being more satisfactory and successful(Finger & Trinidad., 2002). However, students will access the most from ICT implementation where they are not restricted to the inadequate curriculum and resources.

On the contrary, interactive and whole-class tasks in an ICT oriented environment is intended to assist students to enhance their knowledge regarding the topic.

Furthermore, teachers are encouraged to construct their lesson plans in an imaginative and attractive way, which would encourage the learners to interact in the acquisition process. Preceding studies have proven that the consumption of ICT in instruction enriches knowledge comprehension and promotes interactive studies (Finger & Trinidad, 2002; Jorge, 2003; Young, 2003).

This study applies very well to secondary school education where students are at the beginning of their independent learning. In today's world, technology is a crucial part of all of our lives. Industries such as health, education, entertainment and finance all heavily dependent technology. Therefore, teachers have a huge responsibility to develop themselves and keep up with the latest technology, applications and devices in order to facilitate technology in the classroom well and provide quality in teaching and learning (Chang, 2014).

Northern Cyprus, similar to other developing countries is not at the peak stage of integrating ICT into teaching and learning processes in the educational environment. Although restrictions are due to external barriers, there are many factors influencing the use of ICT to make instructing and learning effective in secondary schools in Northern Cyprus. Implementing ICT into education involves the consumption of technology while teaching and learning with hardware and software related to the topic. With the help of students already being familiar with technology, it can be assumed that students learn better in technological based environments. Therefore it may be concluded that the implementation of ICT in schools is crucial. The reason for this is that technology in education aids in pedagogical development and leads to successful learning with the help of ICT approaches. It is correct to say that nearly all topics such as Math's, science, languages and arts, may be acquired more

successfully via technology-enabled learning techniques, programs, devices and equipment. Additionally, ICT provides assistance for both teachers and students by using computer and program technology to reach the learning aims (Jorge, 2003).

The government of Northern Cyprus has made an immense effort, however, the nonattendance of legitimate monetary assistance and a very much addressed significance of ICT in instruction constrain the combination of ICT into all educational programs and secondary education syllabus (Tenekeci, 2011). Few little investigations have been completed to demonstrate that instructive ICT apparatuses could upgrade the nature of teaching methods in Northern Cyprus. The country is a developing region with least reception of ICT in post-primary level of study; simply like other developing countries, it is confronting issues identified with ICT readiness and its blend intopedagogy (Tenekeci, 2011). In regards to this, the points of confinement at which North Cyprus secondary schools give a quality reception of ICT instruments in classrooms are generally obscure. These issues, to a great extent, are subject to a change in government educational schemes however above all, it also depends on the mentality of the individual teacher, readiness and familiarity with ICT devices for general educationaluse.

This research aims at the level of ICT used on teaching and learning, examining the effectiveness of ICT on teaching and learning and finally determines the factors and barriers that limit the use of ICT in teaching and learning in secondary schools in Northern Cyprus.

According to Olelewe and Amaka (2011), a good teacher can use various teaching and learning technologies (such as computer, internet and multimedia resources),

which are increasingly being used in support of the teaching and learning process in presenting new challenges and opportunities for teachers and students to translate information into relevant knowledge that a student can understand, retain and pass on to others under a conducive school environment.

Today, the adventure and advancement of new technologies (ICT) has challenged the traditional method and process of teaching and learning. For Schiller and Tillett (2004), ICT enhances possibility by providing what teachers are able to do, by providing an entry point into the content and enquiries that were not possible without the use of ICT, by extending what students are able to produce and as a result of their investigations and by providing teachers with the opportunities to become learners again. It has made it possible for complicated collaborative activities of teaching and learning by dividing it in space and time with seamless connectivity between them (Olelewe & Amaka, 2011).

Nowadays it is vital to be technically equity and use ICT to learn about the latest news and trends (Plomp, Pelgrum, & Law, 2007). They state that teachers, not just the learners, also find ICT a welcoming experience, enabling them to express their teaching abilities into more attractive and innovative sessions. ICT's have greatly affected the education sector, which has in turn highly influenced teaching, learning and research (Yusuf, 2005). ICT should the ability to enhance, supplement, and strengthen skills, to enable students to be engaged with the lesson, to help apply theoretical experiences and methodology to industry practices, improve incomes of employees in the future, as well as establishing good teaching and helping schools develop and improve (Yusuf, 2005).

Many studies have identified the advantages to the quality of education that ICT enables (Al_Ansari, 2006). Hepp, Hinostroza, Laval and Rehbein (2004) state that the literature contains many unconfirmed claims about the revolutionary potential of ICTs to improve the quality of education. They continue to state that some of the problems of ICT and learning will be resolved in the future when technological devices will lower in price and software will become more readily available.

1.1 Problem statement

Although the consumption of educational technology in classrooms is not obligatory, the use of ICT and the success obtained via technology, dependson how strongly it is manifested and promoted by the teacher (Zhang et al., 2014). In spite of educational technology being accessible in classrooms in secondary schools, the number of instructors that take advantage of it is not at the standard level of a modern day technological society. It has been reported that the computing facilities in educational schools are lacking equipment and expertise. It is also important to note that half of the population of teachers spend up to a few hours a day on the computer and surf the Internet. However, only a very small proportion of these teachers integrate technology into their lessons. The majority of teachers do not feel adequate enough to use this technology or may simply lack the confidence. The Ministry of Education and schools who employ teachers should provide courses and development to overcome these obstacles. The courses should focus on the minimum skills required for training in the modern technological world and the endless opportunities of using websites in education. Educational technological training includes any roles in a school, such as administrative jobs, guidance jobs, and teacher's seminars. Training experienced teachers to use educational technology is liberating and increases motivation. Training on the job, without having to take leave of absence, teachers,

and administrators can improve their digital literacy skills. Teachers who are more technological aware than others, like to share their information and skills encouraging and motivating others around them to learn more (Zhang et al., 2014).

Teachers, who are responsible for a major role in implementing ICT into the lesson, may be posed with complex problems such as the capability of use of ICT instruments, the availability of time in order to be implemented regarding the time-limited lesson, the ability to learn new ICTs and accessibility. The Turkish Cypriot Government and educational representatives are providing investment into educational technology at various levels of education. However, new technological tools are required at a high cost in many schools in the region. This proposes a huge test for secondary school teachers in Northern Cyprus, in the sense that they should be both physically and mentally aware prepared to include ICT in their daily lesson plans. Therefore, the need for the successful implementation of ICT in teaching and learning settings is a persistent issue to be addressed in order to permit the learner proceed fast changing evolution of technology (Ozel & Aksu, 2014).

1.2 Aim of the study

This study aims at investigating teachers' perceptions using ICT tools on teaching and learning process in secondary schools of Northern Cyprus.

1.2.1 Research questions

The research will focus on answering the following research questions:

1.What is the secondary schools teachers' perceptions of using ICT tools in teaching and learning process ?

2. Is there any significance difference between teachers' perceptions of using ICT according to gender, age, teaching experiences ?

2.1 Is there any significance difference between teachers' perceptions of using ICT according to gender?

2.2 Is there any significance difference between teachers' perceptions of using ICT according to age?

2.3 Is there any significance difference between teachers' perceptions of using ICT according to teaching experiences?

1.3 Significance of the study

Nowadays, ICT tools are vital not only for teaching process for the teachers but also inspires learners to concentrate, become conversant and well informed with the trending educational resources available to their fellow colleagues in other institutions. Hence, more awareness and training should be made to teachers and training and re-training processes should be embraced by teachers in enhancing their ICT pedagogical skills, so as to boost their confidence when adopting such tools in the classroom for their students.

In addition, ICT tools using as digital teaching resources, modifications and update, save valuable time and effort, which may be able to contribute to other areas, such as increasing the pedagogical development of the teacher. The significance study of the is to considers secondary school teachers' perceptions as well as exploring the efficiency of ICT tools for teaching and learning.

1.4 Limitation of the study

The participants in this research study are teachers of secondary schools in Northern Cyprus during the fall semester, 2017-2018.

Chapter 2

LITERATURE REVIEW

The following chapter of this study is comprised of an evaluation of written scholarly resource materials, which are scholastically acknowledged and published together with other data correlates with the title of this study paper. The following analysis displays the accuracy and relation to the situation in today's modern society, which will be used as a foundation for constructing this study upon.

2.1 Integration of ICT in Teaching and Learning

Information and communication technology (ICT) which is extensively used in the current education industry, is comprised of personal computers, as well as electronic devices to distribute information via radio, televisions, and projectors between others and widely used in education today (Fu, 2013). ICT is an electronic platform to capture, process, store, and communicate information. The consumption of ICT in the classroom for the purpose of teaching and learning plays many different roles, for it proposes opportunities for teachers and students to function, retain, alter, and recover information. It also promotes the learner to practice learning both independently and actively. ICT encourages the learner to take responsibility for setting their goals and reaching them. ICT widens the opportunity to participate via distance learning. Interactive learning through technology motivates teachers and students to continue using ICT for education purposes outside of school hours. Such a way for teachers to use ICT outside of teaching hours would be planning and preparing lessons and designing course materials such as syllabuses and curriculum,

sharing resources, expertise and advice (Guma, 2013).

The implementation of ICT in education will greatly benefit the ongoing development of instructors as well as the students in terms of beliefs, capabilities, and skills in regards to the successful use of ICT. It is safe to assume that almost all kinds of subject areas whether it be mathematics, science, languages, arts or humanities may be acquired more effectively through technological tools and devices (Ghavifekr & Sani, 2015).

Integrating Information and Communication Technology (ICT) with education signifies the use of communication with computers that is implemented into daily classroom teaching processes. In combination with assisting students in preparing for the Information Age, characterized by the time period of computerizing information, teachers are perceived as the main participants in using ICT in their daily lessons (Ghavifekr, Athirah, & Rosdy, 2015).

ICT gives the opportunity to widen the availability of education. ICT enables learning to take place at any time and at any location. With a today's fast-paced lifestyle and flexibility in routines, education is readily available through the Internet at any time of the day. Students wishing to supplement their existing knowledge or start learning in a new area for a career change are able to access online study materials 24 hours a day, seven days a week. Telecommunication allows teachers and participants to hold discussions being in different locations. With the development of ICT, learning and teaching do not depend totally on books and printed course material. Endless amounts of resources are plentiful and very easily accessed via the Internet. In addition, it can be argued that knowledge can be learned

better through video clips, audio and visual presentations (Fu, 2013) .

ICT helps students in an advantageous way, where they are not compelled to the limited curriculum and restricted resources. On the other hand, they benefit well from interactive activities in the lesson designed for them to be able to inspire and encourage their understanding about the lesson. Teachers also benefit from ICT when creating attractive and interesting lesson plans in order to gain the attention and focus of the student. ICT is almost guaranteed to exceed the students' performance in interactive learning.

Bottino (2003) and Sharma (2003) believe that ICT can improve quality of the delivery of teaching, organize administration, and equip less developed communities. It also exceeds the value of education by organizing learning by conducting conversation in both real-time and delayed, guided teaching, independent learning, complex problem solving, searching and analyzing data, analytical thinking, as well as the being able to communicate and acquire information in collective settings (Yuen, 2003). Many studies have identified the advantages to the quality of education that ICT enables (Al-Ansari, 2006).

Hermans, Tondeur, van Braak, and Valcke (2008) highlighted three key phases for ICT to be accepted and acknowledged by educational professionals. These are integration, enhancement and complementary. The integration approach involves applying the correct use of ICT in a specific subject area, which includes complex theories and skills to enhance students 'knowledge acquirement. In addition, continuous evaluation and analysis of the curriculum is required so that only relative ICT programs are implemented for the goals and aims of curriculum to be reached.

The enhancement approach involves using ICT to highlight the topic introduced. For example, Microsoft PowerPoint fits the purpose it has been designed for in that way that it can be used to present the topic in a very clear and professional format, which encourages innovation leading into discussion and conversing ideas. The Complementary approach involves usingICT to assist educational goals of student. This process enables learners to be more prepared and effective such as researching information on the computer, sending completed work to their teacher via email from their own home, meeting the deadline and using the maximum amount of time and also searching for information from a variety of different sources.

Fister (2008), suggests that tablet PCs increase performance in mathematics teaching and learning. ICTs have the ability to widen access to and improve the quality of education. The use of ICT in educational settings, by itself acts as a drive for development and improvement in the teaching and learning process. Students using ICTs for studying become engrossed in the process of learning. ICT based teaching has the power and potential to modify and develop a schools education system, policy and planning for the better. Researchers and policy makers must collaborate and both share the same philosophies (Ghavifekr & Sani, 2015).

2.2 Usage of ICT in Teaching and Learning Purpose

As Information and communication technology ICT is more and more implemented in formal education today, three coinciding movements of how ICT is actually being applied may be perceived in the classroom today. The following trends can be applied to most teaching and learning interactions within ICT and are integrated with each other; ICT improves efficiency, ICT may be easily transformed and ICT connects an enormously large amount of people with a vast amount of information.

One of the most advantageous gains of ICT in education is the efficiency that can be achieved. For example, by using digital teaching resources, modifications and updates may be made to the materials fair quickly. This can save valuable time and effort, which may be able to contribute to other areas, such as increasing the pedagogical development of the teacher. ICT is further enhanced by the benefits of efficiency attracting greater interest in the topic, especially for students who experience ICT in classrooms for the first time. Nevertheless, it has been claimed that the use of ICT does not ultimately change the way in which the teacher-learner interacts. It may be safe to say that teacher instructs in the same way he or she has always been teaching without the use of ICT. Although there could be no major issue with this approach, it does not use the full potential of ICT in the sense of creativity and exploring new teaching-learning methods. Furthermore, if the teaching and learning processes do not change, the learning outcomes are likely to remain the same and in control of the teacher rather than encouraging independent learning (Cheah & Lim, 2016).

The use of ICT brings endless advantages, however it can not be denied that the teacher's role is lessened. An important consequence of implementing ICT into teaching is that the teacher is no longer the main source of skills and knowledge. The World Wide Web allowing access to online courses enables students to access courses with ease, connect with other students and instructors in online communities, decreasing the reliance on a teacher figure. It is when these acquired knowledge and skills complement and support the learning in the classroom, that real learning can take place with the students obtaining a higher level of understanding (Cheah, 2016).

The application of ICT must be effective in order to ensure that the instructor and

students are able to benefit from it in the best way possible. Therefore, planning for a technology-oriented instruction and learning program must start with suitable and adequate support by the school's management. In order for a school to achieve maximum benefit and success through using ICT, the process of implementing and integrating technology should take place from a very early stage and be continuously monitored and assessed. If properly applied, integrating ICT into schools will conclude with an enormous success and benefit for both instructors and learners. School managers need to be aware of the fact that teachers need training and time to practice the use of ICT before they enter the classroom. As the options are vast from online educational networks which allow teachers to distribute quizzes, assignments and give feedback, to online games, teachers need time to explore themselves in a 'trial and error' style of learning, together with structured seminars by professionals in the industry. The teachers should have the opportunity to be given adequate training and practical testing to be confident enough to implement ICT in their teaching and learning (Ghavifekr & Sani, 2015).

Numerous studies have shown the influences of ICTs on the students' attitude towards the learning methods and on students' performance. Further claims have identified that a suitable use of digital technologies in education can have significant positive effects on both students' attitude and their accomplishment. Studies have proven that the use of ICTs can promote the typical development of both content and teaching pedagogy that is the focus of today's education debates (Prasad, Lalitha, & Srikar, 2015).

Mudzimiri (2012) claimed that Information and communication technology is implemented in teaching difficult problems and it can be broken up into two stages:

cognitive and productive adoption. ICT instruments may only be productive when used in the databases and Microsoft office where other forms of multiple media are also implemented to enhance the knowledge acquisition. ICT may be implemented in the cognitive part when it is conducted to complete activities, which involve taking a journey through the brain. For instance, multiple media discussions maybe incorporated to assist teachers in portraying complex ideas or having access to impulsively, which would be unable to be viewed otherwise. Manipulative victuals are used to analyze numbers and complex structures, which would be impossible for the human brain.

Abik and Ajhoun (2012) stated that the presence of ICT in adaptation approaches has revealed new theories of learning and these have assisted the learning acquisition and interaction process. However, if there is inadequate content included, then the outcome will be unsuccessful. Therefore, it is proposed that ICT should go hand in hand with quality educational content for the most successful acquisition results.

2.3 ICT Enhancing Learning Motivation

ICTs may improve the quality of education in various ways. Firstly, the learners may be more interested and engaged in the lesson, motivating them to learn more. Secondly, students have access to a vast amount of information and are able to take part in more of the researching and independent learning, rather than being instructed with limited resources. Thirdly, teacher training is developed and improved. ICTs are also changeable tools which, when used correctly, can encourage the movement from a teacher orientated environment to a learner-centered environment. ICTs, especially devices such as computers and online-based applications, make way for more modern ways of teaching and learning rather than improving what teachers and

students have always done before. ICT has a big influence not only on what students should acquire, but it also has the power to influence the method in which the students should acquire. The focus of the educational curriculum has evolved from focusing on content, to focusing on performance as well as the method of teaching evolving from teacher oriented to student-oriented. It is without a doubt that ICT encourages and motivates learning for them. ICTs such as video-clips, television news, documentaries, as well as multimedia computer software may be implemented to provide attractive and current content that will connect the student to the learning process. Interactive radio also may be used as a learning tool to attract the students to listen and become more actively participating students in lessons (Noor-Ul-Amin, 2013).

According to Adu & Olatundun (2013), participants in a study claimed that their children felt very motivated in this style of teaching much greater than a standard directive lecture. The parents strongly expressed that they felt that this style of learning process is much more beneficial than the dull and repetitive teacher-centered classroom situation where the teacher simply instructs from a higher level and the students simply listen to the teacher without interacting or talking with each other.

2.4 ICT enhancing learning environment

ICT alters methods of teaching and learning by implementing elements of real life to the learning environments including virtual environments to explain the specific topic. ICT is an extremely successful tool for delivering the learning aims. It is difficult and in some ways impossible to imagine learning environments in the future that are not assisted and sustained by Information and Communication Technologies (ICT) (Adu & Olatundun, 2013).

ICT provides more resolution that is imaginative by various types of learning investigations. One example is implementing technology in a reading class. An e-book may be preferred to listen and read out-loud. Learners have a vast amount of availability to any level and type of book to be downloaded to their computer device such as smartphone, ipad, laptop or personal computer. Furthermore, some e-books may be combined with a reading application, which allows interactive learning to take place, such as checking comprehension, vocabulary and also taking part in educational games related to the material. Thus, ICT designs applications for specific purposes and levels to meet the needs of a wider group of learner applicants. It has been argued that if students spend enough time in an ICT supported environment, it can improve their critical thinking skills. Therefore, schools are strongly encouraged to implement technology in all learning areas and in all learning levels. In these conditions, students are given the opportunity to use technology to the achieve higher cognitive performance within specified learning contexts (Fu, 2013).

2.5 Factors influencing use of ICT to make teaching and learning effective

Various factors have been noted to influence the use of ICT in order to make teaching and learning effective within secondary schools in Northern Cyprus. These factors help students and teachers to use ICT in the teaching and learning process more effectively which include the following:

2.5.1 Training of the teachers

Training and development are very important aspects. However, not only should training and development be comprised improving basic IT skills but also provide an insight to the teacher about how to acquire pedagogical ways to implement ICT in teaching through allowing practice time during the training.

The design and objective of training is vital in motivating teachers and in improving their confidence in using technology (Cubukcuoglu, 2013).

Professional development of teachers requiresa long-term period, continuity, and the utmost flexibility. Unfortunately, it is the case that many teachers do not have adequate qualifications, have too many teaching hours as well as extra administrative duties and in some cases are not paid in time, if not at all. Thereforesuccessful implementation of ICT relies on the probability of providing training and continuous development in order to equip teachers with what they need and based on their personal circumstances and experiences when they can spare the time to learn it. Institutional incentives and support encourage and motivate teachers to develop professionally. This can take the form of a career promotion for teachers who develop and update their ICT skills in class, compared with only using the skills they already have, or alternatively making sure that teachers have enough access to technology after training to practice their skills (Buza & Mula, 2017).

2.5.2 Accessibility of ICT

Effective implementation and integration of ICT into teaching in schools relies highly on the availability and accessibility of ICT resources such as hardware, software, etc. Consequently, if teachers do not have the means to access ICT resources and equipment, then they will not be able to make use of them. Therefore, access to computers, updated software and hardware are vital factors to effective implementation and integration of technology (Guma et al., 2013).

In one study, participants, who were teachers, believed that if they were given an opportunity to access computer rooms whenever required, or if they were able to reserve their space, they would have been able to develop their skills further.

Although it is imperative for computer rooms to be available, it is also necessary to have accessibility to other ICT resources that may be combined in ICTclasses, such as a graphical calculator, the Internet, and various other computer-based programs (Cubukcuoglu, 2013).

ICT has an advantage in that it is flexible. The teaching aspect may be accessed from any where at any time. This may modify the way students are taught and how they learn, due to the method of teaching that is learner guided rather than teacher guided. Therefore, this would better prepare the learners for lifelong learning skills as well as improve the quality of their learning (Abdullahi, 2013)**.**

ICTs claim to widen opportunities and access to education, increases the aim and purpose of education to the requirements of the fast-evolving digital occupations and to strengthen educational quality. In spite of this, presenting different technological devices in classrooms or other educational environments suggests that in order for there to be a full potential of educational benefits of ICT, there needs to exist a direct link between the consumption of ICT and the learners' academic performance. ICT assists students learn better by improving the communication between them and the teachers (Prasad et al., 2015).

2.5.3 Teacher attitudes

Teachers' opinions regarding computers depend on teachers' perceptions about how they feel about using computers in their own teaching techniques. Evaluating teacher attitudes is vital as the amount of computer use in the classroom is largely influenced by them and is in the hands of teachers (Capan, 2012).

Voogt (2005) made it compulsory for teachers to comprehend ICT tools and use

them to ensure a successful outcome of each lesson. It is undoubtedly undisputed that unless teachers practice their ICT skills, they will not be confident or competent in the classroom. As instructors implement newICT tools it is also logical for them to re-adjust and develop their own skills and strategies (Sutherland et al., 2004).

Ghavifekr & Zhang Tengyue (2014) stated that teachers should always be planned and prepared with the necessary equipment in order to have an intention to use ICT positively to implement a successful learning environment and improve the quality of learning. A positive attitude is essential for vitalizing teachers' competence in ICT. However, a teacher needs to be equipped with an adequate amount of ICT skills in order to obtain a positive attitude and the confidence in using ICT (Cubukcuoglu, 2013).If teachers possess a positive attitude towards the use of educational technology and they are keen to develop, then they can easily adapt and integrate ICT into their teaching and learning processes (Guma et al., 2013).

2.5.4 Competence

Successful ICT integration may be influenced by whether or not individuals who have graduated in teaching are knowledgeable and confident in implementing ICT into their teaching methods before they start practicing their occupation. Observed performance in ICT implementation is related to the combination of ICT skills such as using simulations to explore, practice and experiment, choosing and analyzing educational software and designing lessons. The integration of ICT skills means that extensive training and practice has taken place to improve and develop how teachers teach with ICT. Therefore, it is vital for teacher graduates to gain the confidence and ability needed to integrate ICT, in order to increase the quality of teaching and learning (Aslan & Zhu, 2016).

According to Wastiau et al., (2013) student's consumption of ICT for learning during lessons is highly correlated with the teachers' own confidence with using ICT, importance of ICT for teaching and learning and their accessibility to ICT at school. He claimed that students consume ICT the most when they are instructed by a teacher with great confidence in using ICT in the form of information technology, hardware and social media skills. Their ability to use the internet safely and responsibly, with positive opinions about ICT use for teaching and learning also influences students.

Competent teacher's operational skills consist of producing fun, attractive interesting lessons and material with the use of the following: word processing software such as editing digital photos, movies or other graphics, editing online text, creating a database, using a spreadsheet to plot a graph, downloading and installing software on a computer, etc.,encouraging participants in the same class to take part in an online discussion form, design and sustain blogs or actively interact in social networks Wastiau et al., (2013).

In contrast, a lack of ability and confidence in ICT can have negative effects on teaching methods. Such problems include inadequate knowledge to operate programs, a lack of training to operate a smart board, not being able to inspire students to take part in the course by not having any ideas about how to content students with social media and finally, inadequate information about ICT integration. It has been found that instructors desire to use programs such as excel, flash, powerpointand movie maker, however they are unable due to insufficient knowledge about these programs (Özdemir, 2017)**.**

2.5.5 ICT Policy in Education

In Turkish Cypriot schools, although the standard ICT resources are available, the quality and quantity of these resources may be questioned. Regardless of the lack of quality, some teachers make a huge effort to use the existing technology to the best of their ability to carry out their lessons. Therefore, it is vital to comprehend the factors that assist Turkish Cypriot teachers to be able to technology effectively. In the current study, due to the fact that the Cyprus Turkish education system is a centralized system, it may be suggested that a policy is implemented via the Ministry of Education, in order to encourage teachers to use technology. Having a policy, which includes a fair level of ICT, by the Ministry of Education, encourages and motivates everyone and makes it easier to distribute and increase the use of ICT in teaching and learning. Consumption of ICT should not be compulsory; it should be preferred. The reason being, when ICT is enforced upon a teacher and made compulsory, they are reluctant to use it. However, if it is a choice, they are more motivated to explore the endless opportunities (Cubukcuoglu, 2013).

2.5.6 Inadequate time

Özdemir(2017) claimed that many of the problems determined were in the theme of wasting of time. Teachers were consuming a lot of time to prepare material that would be perceived as attractive to students, rather than focusing on how the course content can be better taught via technology. Participants state that it takes hours to produce material that could attract the attention of the students and they had to make a long preparation for a short part of lesson**.**

Agyei and Voogt (2014) reported that availability of time refers to new teachers

being willing to allocate time for developing their skills and abilities on how to use ICT before practicing their teaching skills. The allocation of time given to practice before teaching is highly likely to promote new teachers' transfer of ICT.

2.6 Related Research

ICT has an advantage in that it is flexible. The teaching aspect may be accessed from any whereat any time. This may modify the way students are taught and how they learn, due to the method of teaching that is learner guided rather than teacher guided. Therefore, this would better prepare the learners for lifelong learning skills as well as improve the quality of their learning.

Numerous investigations have the great importance of ICT for learners and instructors. For instance, Rodrigues (2003) carried out an investigation in which technology was used in three different modes. In all the three modes of ICT participation, learners showed growth in passion and motivation. They enjoyed working with the multimedia part of the technology and discovered it to be intriguing. Papaioannou and Charalambous (2011) in a related study found similar result, in his analysis of the daily usage of technology by instructors. He found that there is no relationship in their daily adoption of the technology by instructors. Similarly, as much as ICT tools look very interesting, Loveless (2003), in this study, revealed that several teachers are declaring the necessity to retain speed with new ICT pedagogical tools. Furthermore, declaring that the quality of ICT pedagogical tools venue or setting also has obstructions. Nevertheless, teachers are one of the important factors in students' high achievement. The teachers' beliefs will influence them to integrate ICT in their teaching practice (Hatlevik & Arnseth, 2012). As

found in their study, the knowledge and skills about ICT that teachers are equipped with will encourage teachers to integrate ICT into the teaching and learning process that will increase student learning outcomes(Malaysia Education Blueprint, 2013).

Brown (2006) unveiled that the calculated perception of instructors concerning ICT tools improved with training, and instructors who restricted technology tools appeared to be individuals who didn't display competence. this research on importance of teachers' attitudes and skills regarding ICT implementation in school system is in line with some previous studies such as (Hatlevik & Arnseth, 2012) claim that to ensure successful ICT integration in primary schools, scholars have to emphasize that it is about how teachers integrate ICT into the teaching and learning process as the implementation process to foster students' thinking skills and lastly promote better learning outcomes. Therefore, teachers of today should always be ready and well equipped with ICT competencies and positive attitude to provide ICT-based learning opportunities for students to improve their learning quality (Hamidi &Jafari, 2011).

Vajargah and Saadattlab (2014) conducted a feasibility investigation on the adoption of ICT tools for Iranian high schools in Tehran Province, findings from the study showed that the 362 teachers used for the study identified the useful areas ICT can be used in high school. Findings from the studies also depicted that recent conditions, tools and facilities for the utilization of ICT in high schools were not enough for a proper implementation of ICT in secondary schools. The teachers further outlined and rated conditions, tools and resources that they feel is useful to the nearest future of ICT in secondary schools.

The limitations to ICT found in the study mentioned above were supported by sampled teachers, stating that such issues, if not tackled might hinge the future usage of ICT in secondary schools in relation to teacher and learners development and such issues should be solved by educational experts (Vajargah & Saadattlab, 2014).

In a study conducted by Ndibalema (2014) he looked into teachers attitude towards using ICT tools in schools in Tanzania, he found that teachers in secondary schools don't have enough awareness on usage of ICT tool as an educational tool, this is caused by lack of training. The finding basically portrays how teachers get not enough training regarding ICT and this is majorly on fundamental ICT skills instead of pedagogical skills.

Ghavifekr and Sani (2015) who investigated the effectiveness of integrating ICT into Malaysian schools, found that the technology based education is more effective than the conventional teaching and learning process. This is as a result of adopting ICT tools will enable active classroom setting for teachers and students. More so, most teachers in the investigation believed that ICT assists in enhancing the management of classroom, making students well behaved and attentive.

Deebom and Zite (2016) in a similar work investigated the effectiveness of ICT in teaching and learning, in this study they found that numerous ICT tools and resources are available for usage in the schools, but they are not optimized for instructional delivery. The investigation also pointed out some limitations to the appropriate usage of ICT in schools for educational purpose. Such limitations includes, shortfall in the availability of qualified teachers, network breakdown and also high cost of ICT resources.

Chapter 3

METHODOLOGY

This section aspires to examine different research practices that are used to navigate the investigation of this thesis; which focuses on exploring the efficiency of ICT on teaching and learning in secondary schools in Northern Cyprus, detailed analysis, discussions the sampling technique and data analysis.

3.1 Research Method

The research method of this study is survey; Creswell (2012) stated that the survey proposals are instruments in quantitative research in which you instruct a survey or questionnaire to a sample, which is a small group of people, and represent the targeted majority. The intention of the survey is to identify trends in attitudes, opinions, behaviors, or characteristics of a population, being a large group of people. In the survey research, it is crucial to have a fairly large sample group so that characteristics of target population are similar.

This research focuses on adopting quantitative research, which is usually carried out for deductive research purposes. The descriptive survey design would be adopted for this research work. The survey or descriptive designs are intended to systematically describe the facts and characteristic of given phenomena or the relationships between events and phenomena. These designs are collected together and are presented as "quantitative" as the emphasis is on how much or how many, and the results are usually presented in numerical form (Sharan & Elizabeth, 2016).

Creswell (2012), whilst planning quantitative research, the investigator discovers a research question based on developments in that area. On the other hand, a researcher may identify a need to explain the meaning of an occurrence. Describing a trend would entail the research problem to be resolved by the research aiming to establish the overall propensity of responses from individuals and to research how this propensity varies among people.

3.2 Participants

The pursued participants aimed in this research are teachers of secondary schools in Northern Cyprus during the fall semester, 2017 -2018.

Participants for this study are made up 182 teachers in the secondary schools of Northern Cyprus. They were all selected in a convenience sample from nine secondary schools. As Nicholas (2010) claimed that when using closed format questions participants must select from a set of given answers. These are quicker to answer, easier to understand and require no specific writing skills from the participant. However, they do limitof the range of possible answers.

Table 1. Demographic for Teachers

		Frequency	**Percent**
Gender	Male	68	37.4
	Female	114	62.6
	Total	**182**	**100**
Age	25-30	15	8.2
	30-35	28	15.4
	35 and older	139	76.4
	Total	**182**	**100**
Year of experience	1 and less	3	1.6
	1-5	20	11.0
	6-10	19	10.4
	10 andabove	140	76.9
	Total	**182**	**100**

Table 1 displays that the study is made up of 68male teachers, contributing to 37.4% of the sample and almost double the participants for female teachers,114, making up 62.6% of the total sample for the study. The study shows that the youngest age range of 25-30 includes the least number of participants, only 15, making up 8.2% of the total participants, followed by 28 teachers in the age range of 30-35, making up 15.4% of sample, whereas a high number of participants in the 25 and older age category, 139, contributes to 76.4% of the study's participants. The years of experience of teachers also vary. The results show that only 3 newly qualified teachers with 1 and less years of experience, making up 1.6% of the sample, took part in the study. 20 teachers with 1-5 years of teaching experience took part, making up 11% of the sample. 19 teachers with 6-10 years of teaching experience which contributes to 10.4% of the sample. The largest amount of participants, 140, where found with over 10 years of teaching experience, making up 76.9% of the total sample.

3.3 Data collection tools

Quantitative research method is used for the collection of data from the teachers of secondary schools in Northern Cyprus via a questionnaire. Creswell(2012), the questionnaire is a form used in a survey design that participants in a study complete and return to the researcher.

3.3.1 Questionnaire

Quantitative approaches use more closed-ended questions in which the researcher identifies the response categories such as strongly agree, strongly disagree etc.(Creswell, 2012).

Questionnaires were distributed to the participants to gather data valuable for the

research. The questionnaire was divided into two parts, the first part is the demographics of teachers(gender, ages, teaching experience) and the second part has 15 structured items related to the teacher thatare meant for the whole research study. The questionnaire, which was comprised of a four-point rating Likert scale, included: Strongly Agreed, Agreed, Strongly Disagreed and Disagreed in order to validate the respondents' responses. The questionnaire consist of 15 items, items from (1 to 10) looks into teachers perception of ICT in teaching and learning and the elements of effectiveness of ICT integration in the classroom. Whereas, items from (11 to 15) looks about barriers that teachers faced during ICT utilization in the teaching and learning process.

The questionnaire for this research was obtained from the work of Ghavifekr, Athirah and Rosdy (2015). They carried a research about Teaching and Learning with Technology: Effectiveness of ICT Integration in Schools Teaching and Learning with Technology tocater for the aim of this research, and to investigate the research questions of the study.

3.4 Reliability and Validity

In order to acquire validity of this investigation, the results will be derived from the statistical examination of investigative data. In this investigation, validity will likewise be accomplished by the selection of inquiries with four specialists from EMU and rely upon the appropriate responses and discourse supported by the surveys after they have been gathered from the participating samples. This is due to cover the lapses or issues in the poll for which they presume that this survey is fit for estimating the goals and if it is valid.

Moreover, validity of this examination will be guaranteed via choosing a purposeful respondent when interviewing for this investigative study; this is to guarantee that valid answers are received from the respondents and through this, approving the entire result and procedure of the examination technique.

Scale reliability determines how the items in an instrument set are appropriately linked to the research topic and how strongly and firmly are the items closely linked to one another (Sekeran, 2003). Finding out how fit the items are in other to evaluate the research subject is also a function of Scale reliability test. Cronbach's Coefficient alpha is the most well-known method made use of for assessing the consistency and stability regarding the scale measurement (Pallant, 2007). Also, Cronbach's Coefficient alpha helps to determine the steadiness as well as internal stability of the items in the work.

Coefficient alpha reliability test this research was obtained from the work of Ghavifekr, Athirah and Rosdy (2015) for the research study, which developed by the researchers, they analyzed data for 15 items of questionnaire, and they accepted value of alpha which was ($\alpha = 0{,}61$).

Table 2. Cronbach's reliability test of Item scales

Topics	Cronbach's alpha	N of Items
Teachers' perceptions on using ICT tools in teaching and learning process.	0.83	15

In Table 2, it can be seen that Cronbach's alpha score of all the items is 0.83 statistical standard score point, as more alpha coefficient is good and desirable, and

this is the basis for this study.

3.5 Data analysis

The collected data of this research were analyzed using SPSS (Statistical Package for the Social Sciences) version 23. Quantitative analysis entails analyzing information in the form of numerical numbers and uses mathematical procedures to investigate their properties. The level of measurement used in the collection of the data (numeral, ordinal, interval and ratio) are an important factor in choosing the type of analysis that is appropriate (Nicholas, 2010).

The responses from the questionnaire will be used to compute and analyze data and the whole analysis of the data is based on research questions, which include descriptive analysis, independent sample-test are used to analyze data from independent variables with just two levels such as gender of teachers. One way ANOVA test are used to analyze data from independent variables with three or more level for example, teaching experience and age groups of teachers, the P and T values were used for the analysis and the level of quantitative data significance was taken as $P < 0.05$.

Chapter 4

FINDINGS

The accompanying section of this study focuses on inspecting and analyzing information obtained by methods for the instruments of the examination, exploring the level of ICT use on educating and learning, analyzing the viability of ICT on instructing and learning, and lastly, identifies the elements and hindrances that hinders the utilization of ICT in educating and learning in secondary schools in Northern Cyprus.

4.1 Secondary schools teachers perceptive of using ICT tools in teaching and learning process

The result of this section shows the descriptive estimate of response level in regard to study's Likert measurements. This section measures the responses level of the secondary school teachers regarding every item of the instrument, and it measures either negative or positive situation of the teachers in regard to the items of the instrument as well as the study variables. These items measure the outlook of teachers towards ICT, and, their ICT usage.

Table 3. Teacher's Perception based on teachers feel confident learning new computer skills

Item	**SA**		**A**		**D**		**SD**		**Mean**	**Std. Dev**
	n	%	n	%	n	%	n	%		
I feel confident learning new computer skills.	76	41.8	82	45.1	15	8.2	9	4.9	3.24	.80

Table3 shows that 86.9% of teachers agreed to be confident learning new computer skills, while 13.1% disagreed to being confident in learning new computer skills for teaching purposes. In addition, teachers familiarity and competency in handling ICT were also obtained from the data where the total mean score of 3.24shows that most teachers feel confident learning new computer skills and they are able to use ICT to find teaching materials and resources.

Guma (2013) in a related study found similar result showing evidence that teachers with more experience with computers have greater confidence in their ability with regard to use them effectively. Alsohe reportedthat teachers competence relate directly to confidence. Teachers confidence also relate to their perceptions of their ability to use computers in the classroom, particularly in relation to their students perceived competence.

Table 4. Teacher's Perception based on teachers find it easier to teach by using ICT

Item	**SA**		**A**		**D**		**SD**		**Mean**	**Std. Dev**
	n	%	n	%	n	%	n	%		
I find it easier to teach by using ICT.	62	34.1	100	54.9	16	8.8	4	2.2	3.21	.69

Table4 shows that 89% of teachers agreed that they find it easier to teach with ICT tools, while 11% disagreed that they find it easier to teach with ICT tools. In this context, it shows that teachers are open towards the use of ICT in teaching, not being resistant and they feel comfortable in learning new things with the total mean of 3.21.

A related study proves similar finding showing evidence that instructors adopt ICT to support and encourage newer educational settings to benefit their students (Underwood, 2007).

Table 5. Teacher's Perception based on teachers aware of the great opportunities that ICT offers for effective teaching

Item	SA		A		D		SD		Mean	Std. Dev
	n	%	n	%	n	%	n	%		
I am aware of the great opportunities that ICT offers for effective teaching.	77	42.3	98	53.8	4	2.3	3	1.6	3.37	.61

Table5 shows that 96.1% of the teachers agreed that they were aware of the vast prospects that ICT offers for efficient teaching purposes. Whereas 3.9% disagreed that they were aware about the huge opportunities offered by ICT for effective teaching. This situation shows that teachers view the use of ICT in teaching and learning process as something positive where ICT is the aid needed by teachers to ensure the effectiveness of both teaching and learning process with the mean score of 3.37.

Similar research conducted by Uyouko and Wong (2015) on the teachers` cultural perceptions toward the use ICT in teaching indicated that the participants held positive views of ICT use and they viewed the web as a foreign learning tool and courseware not appropriate to norms and national values but could be adopted and modified.

Table 6. Teacher's Perception based on teachers think that ICT supported teaching makes learning more effective.

Item	SA		A		D		SD		Mean	Std. Dev
	n	%	n	%	n	%	n	%		
I think that ICT supported teaching makes learning more effective.	72	40.1	90	49.5	16	8.8	3	1.6	3.28	.69

Table 6 shows that 89.6% of the teachers agreed that ICT assisted lessons result in more successful learning. Whereas 10.4% disagreed on the subject. The result of this section shows that, most teachers agreed that the use of ICT allows them to teaching more effective with score mean of 3.28.

Hennessy (2003) in a related study found similar result showing evidence that discovered the adoption of ICT was linked with a reduction in focus by the instructor, and an upsurge in learner personal guideline and partnership. An outcome of these modifications in teaching and learning scenes exercise showed that instructors showed the desire to adopt an active tactic in education and advance more approachable techniques so as to care, direct and enable learners' education. It also included observing learners' improvement very carefully and upholding an attention on the knowledge of the course. Learners also were obliged to carry additional duty for their own knowledge via improved involvement. While a wide variety of effective approaches were active, several of which were based on proven exercise, the researcher then established that the education linked together with adopting technology to promote course training and education was still sprouting.

Table 7. Teacher's Perception based on the use of ICT helps teachers to improve teaching with more updated materials

Item	SA		A		D		SD		Mean	Std. Dev
	n	%	n	%	n	%	n	%		
The use of ICT helps teachers to improve teaching with more updated materials.	87	47.8	85	46.7	6	3.3	4	2.2	3.40	.66

Table7 shows that 94.5% of the teachers agreed that the use of ICT assisted teaching encourages the teacher to improve their own teaching skills with on going developing materials, while 5.5% disagreed on the subject. Most teachers realized that the use of ICT helps teachers to improve teaching with more updated materials with total mean of 3.40. It is undeniable that teaching resources and materials provided online are more updated and teachers can refer to it in order to design more interesting and engaging lesson for students.

A related study found similar result showing evidence that discovered that interactive learning through technology motivates teachers and students to continue using ICT for education purposes outside of school hours. Such a way for teachers to use ICT outside of teaching hours would be planning and preparing lessons and designing course materials such as syllabuses and curriculum, sharing resources, expertise and advice (Guma, 2013).

Table 8. Teacher's Perception based on teachers think the use of ICT improve the quality of teaching

Item	SA		A		D		SD		Mean	Std. Dev
	n	%	n	%	n	%	n	%		

I think the use of ICT improves the quality of teaching.	82	45.1	87	47.8	9	4.9	4	2.2	3.36	.68

Table 8 shows that 92.8% of the teachers agreed that the use ICT improves the quality of teaching, while 7.2% disagreed about it. The use ICT improves the quality of teaching with total mean of 3.36.most of teachers agreed that ICTs have greatly affected the education sector, which have in turn highly influenced teaching, learning and research and it have the ability to enhance, supplement, and strengthen skills, to enable students to be engaged with the lesson, to help apply theoretical experiences and methodology to industry practices, improve incomes of employees in the future.

A related study proves similar finding showing evidence that instructors adopt ICT to explore new opportunities for changing their classroom practices by using ICT. Therefore, the use of ICT will not only enhance learning environments but also equip the forth coming generation for a resourceful future and broaden career choices (Harris, 2002).

Table 9. Teacher's Perception based on teachers think the use of ICT helps to prepare teaching resources and material

Item	**SA**		**A**		**D**		**SD**		**Mean**	**Std. Dev**
	n	%	n	%	n	%	n	%		
I think the use of ICT helps to prepare teaching resources and materials.	88	48.4	83	45.6	7	3.8	4	2.2	3.40	.67

Table 9 shows that 94% of the teachers agreed that the use ICT assists in prepare

teaching resources and materials, while 6% disagreed that utilization of ICT helps in preparing teaching materials and resource in teaching purposes. Also the total mean score 3.40. This section shows that teachers are open towards the use of ICT in teaching, not being resistant and they feel comfortable in learning new things.

This result is in agreement with (Chapman, 2003) who found that most teachers have embraced integration of ICT in their teaching.

Table 10. Teacher's Perception based on the use of ICT enables the students' to be more active and engaging in the lesson

Item	SA		A		D		SD		Mean	Std. Dev
	n	%	n	%	n	%	n	%		
The use of ICT enables the students' to be more active and engaging in the lesson.	68	37.4	91	50.	19	10.4	4	2.2	3.23	.72

Table 10 shows that 87.4% of the teachers agreed that the usage of ICT lets the students to engaging more in the lesson, while 12.6% disagreed that the usage of ICT lets the students to engaging more in the lesson. This section revealed that teaching with ICT tools is developed and improved the quality of teaching and teachers benefit from ICT when creating attractive and interesting lesson plans in order to gain the attention and focus of the students with total mean score of 3.23.

Valstad (2011) in a related study found similar result teachers agreed that benefit from ICT provides more imaginative resolutions to various different types of learning investigations. One example is implementing technology in a reading class. An e-

book may be preferred to listen and read out-loud. Learners have a vast amount of availability to any level and type of book to be downloaded to their computer devices such as smartphone, ipad, laptop or personal computer. Furthermore, some e-books may be combined with a reading application which allows interactive learning to take place, such as checking comprehension, vocabulary and also taking part in educational games related to the material.

Table 11. Teacher's Perception based on teachers have more time to cater to students' need if ICT is used in teaching

Item	**SA**		**A**		**D**		**SD**		**Mean**	**Std. Dev**
	n	%	n	%	n	%	n	%		
I have more time to cater to students' need if ICT is used in teaching.	50	27.5	87	47.8	35	19.2	10	5.5	2.97	.83

Table 11 shows that 75.3% of the teachers agreed that they have more time to design courses and materials according to their students' needs when ICT is used for teaching purposes, while 24.7% disagreed about it. Most teachers agreed that the use of ICT allows them to cater to students need with score mean of 2.97.

Oliver (2000) in a related study found similar result ICTs are able to cater for all these requirements and there are is currently a high standard of skills based and performance-based curricula which current ICT's have designed many successful products. As teaching the same content may become monotonous over time, ICT's can help to stimulate both the teacher and student. The quality of education is improved by providing curricular support in difficult subject areas. In order to reach

these goals, teachers must be open to developing themselves and developing techniques to change the teaching processes, which such as teaching partnerships with ICT as a tool.

Table 12. Teacher's Perception based on teachers can still have an effective teaching without the use of ICT

Item	SA		A		D		SD		Mean	Std. Dev
	n	%	n	%	n	%	n	%		
I can still have an effective teaching without the use of ICT.	27	15	88	48.4	52	28.6	15	8.2	2.70	.82

Table 12 shows that 63.2% of the teachers agreed that even without the usage of ICT tools in teaching, they can have an efficient teaching. Whereas36.8% disagreed that even without the usage of ICT tools in teaching, they can have an efficient teaching. In this section, they still believe in the conventional way of teaching where teachers are the center of learning and stated that they can still have an effective teaching without the use of ICT with a recorded mean of 2.7.

A related study proves similar finding showing evidence that despite being aware of the potential benefits of ICT, studies show that almost all teachers do not utilize the potential of ICT to supplement to the quality of learning environments (Smeets, 2005) .

Table 13. Teacher's Perception based on teachers think the use of ICT in teaching is a waste of time.

Item	SA	A	D	SD	Mean	Std. Dev

	n	%	n	%	n	%	n	%		
I think the use of ICT in teaching is a waste of time.	4	2.2	4	6.6	98	53.8	68	37.4	1.74	.68

Table 13 shows that 91.2% of the teachers disagreed that the usage of ICT in teaching is Time-consuming, while 8.8% agreed that the usage ICT in teaching is a waste of valuable time. Most teachers believe in the use of ICT benefits teaching and learning in various ways and saying that ICT integration is not a waste of time with total mean of 1.74.

Korte & Hüsing (2006) in a related study found similar result they revealed that schools in Britain and the Netherlands have appreciated the significance of technical support to help teachers to integrate technology into their teaching. They argued that ICT support in schools influence teachers to apply ICT in classrooms without wasting time troubleshooting hardware and software problems.

Table 14. Teacher's Perception based on teachers are confident that my students' learn best without the help of ICT

Item	**SA**		**A**		**D**		**SD**		**Mean**	**Std. Dev**
	n	%	n	%	n	%	n	%		
I am confident that my students' learn best without the help of ICT.	7	3.8	49	26.9	94	51.6	32	17.6	2.17	.76

Table 14 shows that 69.2% of the teachers disagreed that they are confident that their students learn more effectively without the help of ICT in teaching, while 30.8%

agreed on this issue. In this table, the total means score of 2.17. Previously most teachers believe in the use of ICT benefits teaching and learning in various ways and saying that ICT integration is ICT can help improve students' knowledge, enable them to construct their own ideas and allow them to build skills to process complex thinking abilities.

Table 15. Teacher's Perception based on the classroom management is out of control if ICT is used in teaching

Item	SA		A		D		SD		Mean	Std. Dev
	n	%	n	%	n	%	n	%		
The classroom management is out of control if ICT is used in teaching.	3	1.6	17	9.3	106	58.2	56	30.8	1.82	.66

Table 15 shows that 89.1% of the teachers disagreed that ICT affects student's control in the class when ICT is made use of in teaching, while 10.9% agreed on this issue. Most response of teachers shows that classroom management is not out of control when ICT is used in teaching with mean score of 1.82.

Table 16. Teacher's Perception based on students' pay less attention when ICT is used in teaching

Item	SA		A		D		SD		Mean	Std. Dev
	n	%	n	%	n	%	n	%		
Students' pay less attention when ICT is used in teaching.	5	2.7	12	6.6	105	57.7	60	33	1.79	.68

Table 16 shows that 90.7% of the teachers disagreed that students pay less attention

at the time ICT is made use of in teaching, while 9.3% agreed on the issue. In this table, most response of teachers shows using ICT in teaching improve ideas needed to capture students' attention and inspire them to take an interest in the topic, to bring the real world into the classroom, equip students with knowledge and skills which will improve the salaries of employees in the future with mean score of 1.79.

Odhiambo (2013) in a related study found similar result teachers also benefit from ICT when creating attractive and interesting lesson plans in order to gain the attention and focus of the student. ICT is almost guaranteed to exceed the students' performance in interactive learning.

Table 17. Teacher's Perception based on Students' makes no effort for their lesson if ICT is used in teaching

Item	SA		A		D		SD		Mean	Std. Dev
	n	%	n	%	n	%	n	%		
Students' makes no effort for their lesson if ICT is used in teaching.	3	1.6	22	12.1	98	53.8	59	32.4	1.83	.70

Table 17 shows that 86.2% of the teachers disagreed that students have no desire to take an interest in their lesson if ICT is used for educational purposes, while 13.8% agreed on the mater . In this sectiontotal mean score is 1.83 .

A related study proves similar finding investigated that students' attitude towards the use of ICT in language learning denoted that the students and teachers had positive attitudes towards ICT usage. Thus, students and teachers' attitude would affect the usage of ICT tool (Chua, 2009).

The outcome of the descriptive study of the individual items is showed in Tables above. The majority of the respondents hold a high response in their attitudes towards effective use of ICTs in teaching purpose. All the items which state the positive impacts of ICT usage in teaching purpose. These is evidential in I1, I2, I3, I4, I5, I6, I7, I8, I9 and I10 items. Most especially to the teacher hold a mean score of 2.82 and above signifies that teachers tend to agree on the item statements. Over 90% of the individual items have a maximum mean score points, there by proving an acceptable attitude towards ICT usage by the teacher participants of this study.

On the other hand, in Tables above, it can be found that the items that are found on the minimum mean score point described factors limit ICT use in classroom by teachers. These is evidential in I11, I12, I13, I14 and I15 items having a low mean scores, signifies that teachers tend to disagree on the item statements that use of ICTs is waste of time, students no effort for their lesson, classroom management out of control and less attention if ICTs is used in teaching purpose. as well as students learn best without the help of ICT.

In general, it can observed that all 5 Items (I11 to I15) of the individual mean answers are below the average mean score 2.82. which means teachers disagree ofthesesfactors that limit the use of ICT in classroom.

4.2 Significance difference between teachers' perceptions of using ICT according to gender, age, teaching experiences

4.2.1 Significance difference between teachers' perceptions of using ICT according to gender.

This section compares teacher’s awareness level of use ICT tools in teaching and

learning process according to gender. The comparison was carried out using independent sample T-test of two independent samples with p-value lower than 0.05 indicating the use of an equal-variance t-test approximation.

Table 18. Gender relationship on the awareness of effective usages of ICT tool in teaching and learning

Items	Gender	Mean	Standard Deviation	df	T-value	Sig. Diff. / p-value
I1.	Male	3.309	.797	180	.941	.348
	Female	3.193	.808	142.607		
I2.	Male	3.265	.803	180	.844	.400
	Female	3.175	.613	113.538		
I3.	Male	3.412	.696	180	.739	.461
	Female	3.342	.562	118.548		
I4.	Male	3.368	.710	180	1.319	.189
	Female	3.228	.679	135.952		
I5.	Male	3.471	.680	180	1.092	.276
	Female	3.360	.653	136.645		
I6.	Male	3.412	.717	180	.836	.404
	Female	3.325	.658	131.573		
I7.	Male	3.441	.699	180	.620	.536
	Female	3.377	.657	134.091		
I8.	Male	3.294	.670	180	.997	.320
	Female	3.184	.747	153.231		
I9.	Male	3.044	.871	180	.898	.371
	Female	2.930	.806	132.419		
I10.	Male	2.632	.845	180	.829	.408
	Female	2.737	.810	136.306		
I11.	Male	1.750	.720	180	.210	.834
	Female	1.728	.656	130.679		
I12.	Male	2.176	.809	180	.084	.933
	Female	2.167	.728	129.363		
I13.	Male	1.765	.626	180	.851	.396
	Female	1.851	.681	150.617		
I14.	Male	1.779	.643	180	.180	.857

	Female	1.798	.706	151.598		
I15.	Male	1.853	.675	180	.347	.729
	Female	1.816	.711	146.886		

Significant point = *p <.05 , Group average mean of female =2.794, male = 2.887

Table 18 above shows the secondary teachers' perceptions of ICT tools in secondary schools teachers in teaching and learning purpose based on gender, from this table it can be observed that all items have p value greater than 0.05, this statically proves that, a strong relationship exist between gender of secondary schools teachers in Northern Cyprus regarding of effective usages of ICT tool in teaching and learning.

The average mean for table 18 shows 2.887 for male teachers and 2.794 for female teachers. In addition, 60% of all participants, both male and female respondents have the mean scores above of the average as shown in Table 6. This indicates that important awareness level in relation amid male and female teachers on the use of ICT in learning and teaching tool, and, therefore demonstrates a higher relation.

4.2.2 Significance difference between teachers' perceptions of using ICT according to teaching experiences

One-way ANOVA analysis tools is used in order to specify whether there is a significant difference and connection between variables that holds more than two groups and the items of the questionnaire instruments used in this research study. Therefore this section evaluates teacher’s perceptions of the use of ICT according to teaching and also the relationship between teaching experience as regard their use of ICT tools in teaching and learning purpose.

Table 19. Descriptive statistics of satisfaction level based on teaching experience

Items	Teaching Experiences	N	Mean	Std. Deviatin
I1	1 AND LESS	3	3.67	.58
	1-5 Y	20	3.50	.51
	6 – 10	19	3.16	.91
	10 AND MORE	140	3.20	.79
I2	1 AND LESS	3	3.00	.00
	1-5 Y	20	3.35	.59
	6 – 10	19	3.16	.83
	10 AND MORE	140	3.20	.69
I3	1 AND LESS	3	3.33	.58
	1-5 Y	20	3.40	.50
	6 – 10	19	3.37	.76
	10 AND MORE	140	3.36	.61
I4	1 AND LESS	3	3.67	.58
	1-5 Y	20	3.35	.67
	6 – 10	19	3.32	.82
	10 AND MORE	140	3.26	.68
I5	1 AND LESS	3	4.00	.00
	1-5 Y	20	3.60	.50
	6 – 10	19	3.47	.84
	10 AND MORE	140	3.35	.66
I6	1 AND LESS	3	3.33	.58
	1-5 Y	20	3.25	.64
	6 – 10	19	3.47	.84
	10 AND MORE	140	3.36	.67
I7	1 AND LESS	3	3.67	.58
	1-5 Y	20	3.55	.51
	6 – 10	19	3.42	.84
	10 AND MORE	140	3.37	.67
I8	1 AND LESS	3	3.00	.00

	1-5 Y	20	3.25	.79
	6 – 10	19	3.26	.87
	10 AND MORE	140	3.22	.70
I9	1 AND LESS	3	3.33	.58
	1-5 Y	20	3.00	.73
	6 – 10	19	3.26	.93
	10 AND MORE	140	2.92	.83
I10	1 AND LESS	3	2.33	.58
	1-5 Y	20	2.65	.88
	6 – 10	19	2.74	.99
	10 AND MORE	140	2.71	.80
I11	1 AND LESS	3	1.67	.58
	1-5 Y	20	1.70	.66
	6 – 10	19	1.58	.61
	10 AND MORE	140	1.76	.70
I12	1 AND LESS	3	2.67	.58
	1-5 Y	20	2.20	.83
	6 – 10	19	2.26	.81
	10 AND MORE	140	2.14	.74
I13	1 AND LESS	3	2.00	.00
	1-5 Y	20	1.95	.69
	6 – 10	19	1.63	.68
	10 AND MORE	140	1.82	.66
I14	1 AND LESS	3	1.67	.58
	1-5 Y	20	1.80	.62
	6 – 10	19	1.74	.93
	10 AND MORE	140	1.80	.66
I15	1 AND LESS	3	2.33	.58
	1-5 Y	20	1.95	.76
	6 – 10	19	1.84	.96
	10 AND MORE	140	1.80	.65

Table 20. Level perception of teachers on the use of ICT in teaching and learning based on teaching experience

		Sum of Squares	df	Mean Square	F	P
I feel confident learning new computer skills.	Between Groups	2.248	3	.749	1.164	.325
	Within Groups	114.593	178	.644		
	Total	116.841	181			
I find it easier to teach by using ICT.	Between Groups	.590	3	.197	.409	.747
	Within Groups	85.476	178	.480		
	Total	86.066	181			
I am aware of the great opportunities that ICT offers for effective teaching.	Between Groups	.026	3	.009	.023	.995
	Within Groups	68.309	178	.384		
	Total	68.335	181			
I think that ICT supported teaching makes learning more effective.	Between Groups	.644	3	.215	.444	.722
	Within Groups	86.065	178	.484		
	Total	86.709	181			
The use of ICT helps teachers to improve teaching with more updated materials.	Between Groups	2.333	3	.778	1.789	.151
	Within Groups	77.387	178	.435		
	Total	79.720	181			
I think the use of ICT improves the quality of teaching.	Between Groups	.489	3	.163	.349	.790
	Within Groups	83.296	178	.468		
	Total	83.786	181			
I think the use of ICT helps to prepare teaching resources and materials.	Between Groups	.786	3	.262	.576	.631
	Within Groups	80.934	178	.455		
	Total	81.720	181			
The use of ICT enables the students' to be more active and engaging in the	Between Groups	.194	3	.065	.123	.947
	Within Groups	93.570	178	.526		

lesson.	Total	93.764	181			
I have more time to cater to students' need if ICT is used in teaching.	Between Groups	2.376	3	.792	1.151	.330
	Within Groups	122.487	178	.688		
	Total	124.863	181			
I can still have an effective teaching without the use of ICT.	Between Groups	.485	3	.162	.236	.871
	Within Groups	121.894	178	.685		
	Total	122.379	181			
I think the use of ICT in teaching is a waste of time.	Between Groups	.621	3	.207	.445	.721
	Within Groups	82.720	178	.465		
	Total	83.341	181			
I am confident that my students' learn best without the help of ICT.	Between Groups	1.026	3	.342	.593	.620
	Within Groups	102.694	178	.577		
	Total	103.720	181			
The classroom management is out of control if ICT is used in teaching.	Between Groups	1.110	3	.370	.845	.471
	Within Groups	77.907	178	.438		
	Total	79.016	181			
Students' pay less attention when ICT is used in teaching.	Between Groups	.115	3	.038	.081	.970
	Within Groups	83.951	178	.472		
	Total	84.066	181			
Students' makes no effort for their lesson if ICT is used in teaching.	Between Groups	1.177	3	.392	.807	.492
	Within Groups	86.543	178	.486		
	Total	87.720	181			

The group average mean of Table 19 is 2.91,and, besides all the scores of standard divination are presented below (1), which means that perceptions fall within and

around the average mean. It is seen that 64% of mean score of individual responses for the levels of experience in teaching are actually above the average mean scores from the table. This demonstrates that a good awareness level in relations relies on teaching experience on the efficient use of ICT tools in learning and teaching.

Andoh-Buabeng and Totimeh (2012) in a similar work found out that instructors with more years of educating experience appear to utilize ICT more much of the time to change their instructing than those with few years of educating experience.

Table 20 shows the teachers awareness of the relationship between and within teaching experience regarding the willingness and skills level of effective usage ICT tools in teaching and learning a dependable factors. It can be observed that all items in Table 20 (P >.05). This spastically proofs that there is no significant difference of teaching experience on the ICT use in learning and teaching.

4.2.3 Significance difference between teachers' perceptions of using ICT according to age of teachers

This section compares the teachers' perceptions regarding their awareness of skills of using ICT tools according to their age. Hence, One-way ANOVA test is computed in order to check whether there is a significance difference or not, according to p<.05.

Table 21. Descriptive statistics of satisfaction level based on Ages

Age		N	Mean	Std. Deviation
I feel confident learning new computer skills.	25-30	15	3.3333	.61721
	30-35	28	3.3571	.82616
	35 AND BIGGER	139	3.2014	.81809
	Total	182	3.2363	.80345

I find it easier to teach by using ICT.	25-30	15	3.2000	.56061
	30-35	28	3.2500	.70053
	35 AND BIGGER	139	3.2014	.70382
	Total	182	3.2088	.68957
I am aware of the great opportunities that ICT offers for effective teaching.	25-30	15	3.3333	.48795
	30-35	28	3.3214	.66964
	35 AND BIGGER	139	3.3813	.61850
	Total	182	3.3681	.61444
I think that ICT supported teaching makes learning more effective.	25-30	15	3.5333	.51640
	30-35	28	3.2500	.75154
	35 AND BIGGER	139	3.2590	.69510
	Total	182	3.2802	.69214
The use of ICT helps teachers to improve teaching with more updated materials.	25-30	15	3.5333	.51640
	30-35	28	3.4643	.69293
	35 AND BIGGER	139	3.3741	.67323
	Total	182	3.4011	.66366
I think the use of ICT improves the quality of teaching.	25-30	15	3.4000	.50709
	30-35	28	3.3214	.72283
	35 AND BIGGER	139	3.3597	.69164
	Total	182	3.3571	.68037
I think the use of ICT helps to prepare teaching resources and materials.	25-30	15	3.6000	.50709
	30-35	28	3.3214	.66964
	35 AND BIGGER	139	3.3957	.68756
	Total	182	3.4011	.67193
The use of ICT enables the students' to be more active and engaging in the lesson.	25-30	15	3.2000	.41404
	30-35	28	3.2857	.80999
	35 AND BIGGER	139	3.2158	.72993
	Total	182	3.2253	.71974
I have more time to cater to students' need if ICT is used in teaching.	25-30	15	3.1333	.51640
	30-35	28	3.0000	.90267
	35 AND BIGGER	139	2.9496	.84548
	Total	182	2.9725	.83057
I can still have an effective teaching without the use of ICT.	25-30	15	2.8667	.74322
	30-35	28	2.7500	1.04083

	35 AND BIGGER	139	2.6691	.78379
	Total	182	2.6978	.82227
I think the use of ICT in teaching is a waste of time.	25-30	15	1.7333	.59362
	30-35	28	1.7857	.83254
	35 AND BIGGER	139	1.7266	.65724
	Total	182	1.7363	.67856
I am confident that my students' learn best without the help of ICT.	25-30	15	2.2667	.70373
	30-35	28	2.2857	.80999
	35 AND BIGGER	139	2.1367	.75375
	Total	182	2.1703	.75699
The classroom management is out of control if ICT is used in teaching.	25-30	15	1.9333	.59362
	30-35	28	1.8929	.73733
	35 AND BIGGER	139	1.7914	.65358
	Total	182	1.8187	.66072
Students' pay less attention when ICT is used in teaching.	25-30	15	1.8667	.35187
	30-35	28	1.7857	.87590
	35 AND BIGGER	139	1.7842	.66771
	Total	182	1.7912	.68151
Students' makes no effort for their lesson if ICT is used in teaching.	25-30	15	2.1333	.63994
	30-35	28	1.8929	.78595
	35 AND BIGGER	139	1.7842	.67847
	Total	182	1.8297	.69616

Table 22. Level perception of teachers on the use of ICT in teaching and learning based on Ages

		Sum of Squares	**df**	**Mean Square**	**F**	**P**
I feel confident learning new computer skills.	Between Groups	.719	2	.360	.554	.576
	Within Groups	116.122	179	.649		
	Total	116.841	181			
I find it easier to teach by using ICT.	Between Groups	.056	2	.028	.059	.943
	Within Groups	86.010	179	.481		

	Total	86.066	181			
I am aware of the great opportunities that ICT offers for effective teaching.	Between Groups	.103	2	.052	.136	.873
	Within Groups	68.232	179	.381		
	Total	68.335	181			
I think that ICT supported teaching makes learning more effective.	Between Groups	1.049	2	.525	1.096	.336
	Within Groups	85.660	179	.479		
	Total	86.709	181			
The use of ICT helps teachers to improve teaching with more updated materials.	Between Groups	.475	2	.238	.537	.585
	Within Groups	79.244	179	.443		
	Total	79.720	181			
I think the use of ICT improves the quality of teaching.	Between Groups	.064	2	.032	.069	.934
	Within Groups	83.722	179	.468		
	Total	83.786	181			
I think the use of ICT helps to prepare teaching resources and materials.	Between Groups	.775	2	.388	.857	.426
	Within Groups	80.945	179	.452		
	Total	81.720	181			
The use of ICT enables the students' to be more active and engaging in the lesson.	Between Groups	.124	2	.062	.119	.888
	Within Groups	93.639	179	.523		
	Total	93.764	181			
I have more time to cater to students' need if ICT is used in teaching.	Between Groups	.482	2	.241	.347	.707
	Within Groups	124.381	179	.695		
	Total	124.863	181			
I can still have an effective teaching without the use of ICT.	Between Groups	.619	2	.309	.455	.635
	Within Groups	121.760	179	.680		
	Total	122.379	181			
I think the use of ICT in teaching is a waste of time.	Between Groups	.082	2	.041	.088	.916
	Within Groups	83.259	179	.465		
	Total	83.341	181			
I am confident that my students' learn best without the help of ICT.	Between Groups	.669	2	.335	.581	.560
	Within Groups	103.050	179	.576		
	Total	103.720	181			

The classroom management is out of control if ICT is used in teaching.	Between Groups	.455	2	.227	.518	.596
	Within Groups	78.562	179	.439		
	Total	79.016	181			
Students' pay less attention when ICT is used in teaching.	Between Groups	.093	2	.047	.099	.906
	Within Groups	83.973	179	.469		
	Total	84.066	181			
Students' makes no effort for their lesson if ICT is used in teaching.	Between Groups	1.783	2	.891	1.857	.159
	Within Groups	85.937	179	.480		
	Total	87.720	181			

The group average mean for Table 21 shows 2.88. In addition 68% of all individual responses mean are significantly above the average mean scores from this table. This statistically explains a good awareness level in relationship between ages of the usage of ICT in teaching and learning tool.

Table 22 demonstrates the teachers' perception between and within age groups of secondary schools teachers in Northern Cyprus, It can be observed that, all the measures (items) shoved P value greater than 0.05, this statistically proofs that there is no significant difference as regard teachers ages and awareness and perception of the ICT use in learning and teaching.

Chapter 5

CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusion

This study investigated that the awareness of teachers regarding the efficient use of ICT helps teaching and learning processes in secondary schools in Northern Cyprus. The information for this study was obtained by a descriptive survey design, with182 teachers from 9 secondary schools in Northern Cyprus participating in this study. The survey was conducted during the fall semester of 2017-2018.

This study reviews aims at the level of ICT use on teaching and learning, examines the effectiveness of ICT on teaching and learning and finally determines the factors and barriers that limit the usage of ICT in teaching in secondary schools in Northern Cyprus. Implementing ICT into education involves the consumption of technology while teaching and learning with hardware and software related to the topic. With the help of students already being familiar with technology, it can be assumed that students learn better in technological based environments.

Moreover, this study showed that ICT assists students learn better by improving the communication between them and their teachers in the classroom and also that ICT encourages students to continue learning about topic outside of the classroom, it removes the barrier of time in education for students and teachers. ICT has an advantage in that it is flexible. Students are now aware and are grateful for the

capability to be involved with education in any location at the time which suits the learner. Teachers agree that ICTs enable them to express their teaching abilities into more attractive and innovative sessions, ICT has the potential to improve the quality of education.

The outcomeof this study display that larger number of the answers hold a high response in their perceptions in regard to ICT usage for teaching and learning purposes. It has been found that more than 80% of teacher participants agreed in the effective use of ICT in teaching and learning purposes. It has been discovered that they will also use ICT in teaching and learning in the future. There is a very strong positive attitude that can be perceived from the teachers' responses.

The study demonstrates that there was a significant difference between male and female participants with regard to students learning more effectively with the use of ICT. In addition to teachers expressing their teaching aims through ICT, ICT also lets students to be more innovative and creative.

Based on the age of the teachers that participated in this study, it was discovered that greater number of teachers in secondary schools in Northern Cyprus with ages older than 35 years own a good awareness level in regards to the use of ICT promoting active and engaging lessons for students' best learning experience. Further findings showed that teachers reported that they believe there is no significant difference between the ages of teachers and the effective use of ICT tools in the teaching and learning purpose.

Also, with regard to the instructions teaching experiences in the various schools, it

was indicated that instructors with more than 10 years working experience in the Turkish Republic of Northern Cyprus (TRNC) are regarded respected because of their knowledge and their work experience. It is further suggested that the findings and results of the study prove that the use of ICT to teach students, influence students learning and participation in classroom activities.

It has also been discovered that with regard to teachers responses, there is no significant difference between the teaching experience of teachers and effective use of ICT tools for teaching and learning purposes.

Conclusively, it can be generally this study shows that no significant difference exists between gender, teaching experience and ages of teachers in secondary schools in Northern Cyprus regarding their various uses of ICT usage in teaching and learning purposes.

Finally, the study revealed that there was inconsistency between teachers' belief and their actual use of technology in classroom. It could be assumed that teachers do wish to develop themselves and use ICT, however, lack the skills or do not have access to training. This study has identified the major barriers preventing more successful integration of ICT and achieving a higher impact. The findings of the study revealed that the majority of teachers, 63.2%, strongly agreed and agreed that teachers can still have an effective teaching without the use of ICT in teaching purpose, which we have discovered as one of the greatest challenges.

5.2 Recommendation

As it is previously discussed, the current research is considered the secondary school teachers' perceptions of using ICT tools in education. ICT tools are vital not only for

teaching process for the teachers but also inspires learners to concentrate, become conversant and well informed with the trending educational resources available to their fellow colleagues in other institutions. Hence, more awareness and training should be made to teachers and training and re-training processes should be embraced by teachers in enhancing their ICT pedagogical skills, so as to boost their confidence when adopting such tools in the classroom for their students.

Moreover, school administrators and experts should ensure that these tools are widely used and embraced by teachers during teaching to enable quality of teaching and maximizing the whole essence of education in general.

However, many teachers have attested the enhancement of ICT tools not only in instructional roles but also in informative role, captivating role that it plays in teaching and learning processes in the classroom.

As a result, for future related studies, in order to gain a better outcome, this could be recommended to a bigger sample size as well as other level of instruction such as primary school, high school or any other educational institutions to adopt ICT tools for teaching purposes regardless of any variable factors like age, experience, gender, skill etc.

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APPENDIX

Appendix A: questionnaire

Instructions:

Dear Teachers,

It would be ideal if you answer the accompanying inquiry by choosing the proper level of understanding by ticking (X) on the accompanying explanations.

Section 1: Demographics for teachers

Gender: Male ☐ Female ☐

Age: 25 – 30 ☐ 30 – 35 ☐ 35 and older ☐

Teaching Experience: less than a year ☐ 1-5years ☐ 6-10years ☐ more than 10 ☐

Section 2: questionnaire for teachers					
S/N	**Questionnaire Items**	**Strongly Disagree**	**Disagree**	**Agree**	**Strongly Agree**
1	I feel confident learning new computer skills.				
2	I find it easier to teach by using ICT.				
3	I am aware of the great opportunities that ICT offers for effective teaching.				
4	I think that ICT supported teaching makes learning more effective.				
5	The use of ICT helps teachers to improve teaching with more updated materials.				
6	I think the use of ICT improves the quality of teaching.				
7	I think the use of ICT helps to prepare teaching resources and materials.				
8	The use of ICT enables the students' to be more active and engaging in the lesson.				
9	I have more time to cater to students' need if ICT is used in teaching.				
10	I can still have an effective teaching without the use of ICT.				
11	I think the use of ICT in teaching is a waste of time.				
12	I am confident that my students' learn best without the help of ICT.				
13	The classroom management is out of control if ICT is used in teaching.				
14	Students' pay less attention when				

	ICT is used in teaching.				
15	Students' makes no effort for their lesson if ICT is used in teaching.				