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**DETERMINING RELATIONSHIP BETWEEN TEACHERS'
SELF-EFFICACY PERCEPTION AND MOBILE
TECHNOLOGIES ACCEPTANCE MODEL**

**CURRICULUM AND INSTRUCTION
MASTER'S DEGREE THESIS**

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DETERMINING RELATIONSHIP BETWEEN TEACHERS' SELF-EFFICACY
PERCEPTION AND MOBILE TECHNOLOGIES ACCEPTANCE MODEL

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Hatem A. M. Darabee

June 18, 2019

***To my parents, my beloved family, and my friends inside and outside
Palestine***

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ABSTRACT

Aim of Study: This study aimed to assess/measure the relationship between acceptance of mobile phone applications and the self-efficacy of teachers in Northern Cyprus.

Methodology: The descriptive analytical method was used to assess the acceptance of mobile phone applications and the self-efficacy. The sample of the study consisted of 30 teachers of mathematics in primary and secondary schools in Northern Cyprus. A quantitative questionnaire study was carried out using the 5-point Likert for the assessment by two scales: Self-efficacy and Mobile technologies acceptance model. The Statistical Package for Social Sciences (SPSS) (32) was used to analyze the quantitative data.

Result: The study examined the relationship between mobile phone acceptance and self-efficacy, which showed a great relationship between the two scales. The study also revealed the results of a great relationship between the two scales with differences between the types of mobile phone with the teacher and attributed these differences to smartphone teachers.

Conclusion: The results confirmed that Subjective Norms and Attitude towards Use have a strong impact, but less than the rest of the remaining axes. The reason lies in the role of mobile phones in their practical, scientific and intelligent applications.

Keywords: Mobile Phone Applications, Self-efficacy, Mathematics Teachers
Method's

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Chapter I

1. INTRODUCTION

1.1. Problem Statement

Consulting activities and procedures should grow one of some main objects of learning institutions. Consulting trades can move developed by training and education, so it should be a preference for teaching universities to develop. Evaluating experiences and methods are organized at those steps of education, which creates with basic thinking abilities such as measurement, identification, summarization and application, and then move on to complex thinking methods such as evaluative reasoning, creative thinking, problem-solving and conclusion making. Each of these arrangements consists of a number of experiences and approaches, evaluative reasoning, for example, skills such as you know the mistakes (Jamal, 2015).

Self-efficacy is an example of determinants of biased and structured learning. It includes three determinants: personal, environmental and behavioral. Interaction and exchange between these determinants is the source of the system of social knowledge (Ibrahim, 2013). The self-efficacy of the supervisor describes to his behavior in the classroom, while great as the supervisor's efforts in teaching and the specific objectives. The extremely adequate tutor is willing to experience new teaching methods to suffice the requirements of his followers and has a great area of planning also structure (Tschannen-Moran, et al, 2014). Self-efficacy is designated as the person's feelings around his powers to work station. Self-efficacy was studied in complex states of social activities. It introduces the link within self-efficacy achievement in mathematics, the link among self-efficacy, self-concept, self-efficacy and goal setting. The outcomes of this knowledge have remained classified as applications for educational practices and future research (Michaelides, 2013).

The research of Kahle (2015) studied the association among the variables of the efficiency of mathematics, this performance about schooling mathematics, and the ways of schooling in every information of ideas. In the enlightenment of the ideas, They use conceptually structured instruction programs, but if people show less reliable subjects, they use methods regarding promoting a procedural system. Burton (2011) proposed that mathematics subjects should be included in any of the science

content of the primary school, which would begin to instructional issues and instructional efficiency in learning teacher of understanding of the content of state mathematics.

In view of the great technological development in all different areas at this time mentioned, which introduced the field of learning in either school issues or sub-disciplines, teaching methods, the general purpose of the educational method, institutional centers played an important function in improving the educational base.

1.2. Purpose of the Study

The aim of this study was to identify the relationship between self-efficacy perception of mathematics and mobile technologies acceptance models.

The following question stems from the sub-questions

1. What is the degree of mobile technologies acceptance model by mathematics teachers in North Cyprus?
2. What is the degree of self-efficacy perception by mathematics teachers in North Cyprus?
3. Are there differences in mobile technologies acceptance model and self-efficacy perception among mathematics teachers in North Cyprus due to variables (gender, years of experience, type of mobile phone and the number of hours spent on the phone)?
4. Is there any relationship between self-efficacy perception and mobile technologies acceptance model among North Cyprus mathematics teachers?

1.3. The significance of the Study

The significance lies in the topic that will be addressed by the researcher in determining the relationship between teachers' self-efficacy perception and Mobile technologies acceptance model. This study is important in three levels (theory, practice and research):

1. **In the theoretical level:** Areas advanced theoretical framework on the application of self-efficacy perception and Mobile technologies acceptance model in mathematics.
2. **In the practical level:** Mathematics teachers may benefit from the development of their teaching methods.
3. **In the research level:** It may open the way to other studies containing different variables.

1.4. The Study Main Concepts

Self-efficacy: It's mean the individual's convictions for his own ability to carry out a particular behavior that leads to specific results. And Shere (2006) defines it as "a general set of subjective expectations of an individual about his or her ability to perform behavior, achieve goals, and overcome obstacles in daily life situations."

Model Acceptance Technology: Farid (2015) defined it is an instrument developed to monitor the user's access to any new technology through specific factors involved in it to affect the desire to use that technology in the future. And Dizon (2016) is a model created by behavioural and external factors that help measure the effectiveness of support technology based on learning applications of mobile adaptation to enable students to learn.

1.5. Abbreviations

- **R ;** Requirements.
- **BI;** Behavioral Intention.
- **AU;** Attitude towards Use.
- **PB;** Perceived Benefit.
- **SN;** Subjective Norms.
- **PE;** Performance Expectation.
- **MTAM;** Mobile Technologies Acceptance Model
- **SE;** Self-Efficacy .

Chapter II

2. LITERATURE REVIEW

In this chapter, the researcher deals with the variables of this study: Self-efficacy perception and Mobile technologies acceptance model the following is an introduction to it.

2.1. The Self-efficacy

2.1.1. Definition of self-efficacy

The subject of personal efficiency and experience to deal with the events of life has germinated an important feature of the writings of scholars, thinkers, and psychologists. In their writings, there are several terms that represent the concept of self-sufficiency or the quality of the person. In 1844-1900, the German philosopher Friedrich Nietsohe expressed "the concept of self-sufficiency in its famous meaning (willpower), which he regarded as the most basic human motive, and what the self wants above all else, and that the self-rises when he defeat the problems of his present position". The individual tries to overwhelm the situation and deal with it subsequently.

Self-efficacy means "the individual's convictions for his own experience to carry out a particular behavior that leads to specific issues." Shere (2006) defines it as "a general set of subjective expectations of an individual about his or her ability to perform behavior, achieve goals, and overcome obstacles in daily life situations." Holland (2007) knows it "as a set of expectations that make someone believe that the path that behavior will take will be successful". Schwarzer (2008) defines it as "the expectation of the end result of recognizing the potential consequences of an individual's activity and referring to the control of an individual's personal activity or strength". Regeh and Glancy (2009) define it "as referring to a process of knowledge that triggers expectations whereby the individual can solve problems and meet new challenges". Mavis (2010) defines it as "a special experience of one's abilities to perform a special task successfully".

This study, the researcher adopted the definition of self-efficacy as the individual's convictions for his ability to perform a specific behavior that leads to specific results.

2.1.2. Samples Theoretical/ Conceptual frameworks of self-efficacy

Most educator instruction applications in universities change teachers to teach all instructional elements, including mathematics. Many studies have indicated that teachers confront difficulties in mathematics education. Bencze and Upton (2006) found that many teachers are suffering from developing mathematics and withdraw knowledge. Eshach (2003) points out those youngsters' educators are keen to teach mathematics, and Stevens & Davis (2007) noted that many classroom teachers are making mathematics education one of the most challenging assignments for them.

The cause of these difficulties is that educators prepare not to have the skills required to teach mathematics. This is confirmed by many studies, including the Sarikaya study (2004). The supervisors did not have enough accurate information to teach math, and their level of knowledge of ideas clear knowledge, and possess alternative ideas. The American Association for the Advancement of Mathematics (AAAM, 1997) associated this to a deficiency in teacher education programs. The Association recorded that some low-level academics in the fundamental plane were well dressed in mathematics and suggested that programs of education Teachers receive useful information and opinions towards mathematics.

There is no uncertainty that the educational performance of the supervisor is influenced by multiple determinants, including precise information and level of knowledge of systematic concepts. An important factor affecting its educational behavior is its self-efficacy. Bandura's human cognitive theory proposes that somebody's ideas linked to his capacity to perform a special work change how he performs the work. (Bandura, 2003) Recognized two dimensions of self-efficiency: the first dimension is described self-efficacy and is determined by the individual's belief in his ability to perform the tasks expected of him firmly. The second dimension is called the Consequence Prospect; it relates upon the person's mind that his behavior during an appropriate way will provide the aspired outcomes.

The activities support Bandura's views, where the self-efficacy of the academic impacts his or her educational behavior; the supervisor with high self-efficacy functions better; he has a great passion for education, makes an effort to stimulate his student, is more comfortable, and has a great level of self-trust. Klein, et al. (2002) found that the teacher, who has a low self-efficacy, has little desire for education, does not pursue purposes, has dictatorial tendencies in education, and does not trust his instructional experiences. Bleicher (2005); the self-efficacy of the instructor undoubtedly shows the results of education. Students are more available in mathematics, more understanding, more involved, and promote confident leaning towards knowledge (Tosun, 2000).

Teaching mathematics in the field of investigation is one of the modern courses in the improvement of science learning. Many teachers (Freedman, 2003) study the rules and methods of mathematics and form and describe the objective language and move to new positions. It also helps to get to develop a student's personality, in terms of self-belief, a sense of achievement, respect for himself, and improvement of perspectives, skills and imaginative opportunities for preparation and carefully examine thinking.

In America, Scientific Education Standards in the US National Research Council reinforced the obligation to use the exact survey on education and training mathematics for all grades (National Research Council, 2000). In Palestine, the use of the questionnaire in research and logical thought was one of the usual products of learning mathematics in the basic education step.

Many studies have suggested the use of classroom reviews, but their level of use in the primary classes has not transferred the level of enthusiasm (Windschitl, 2002). Educators' positions in instruction mathematics add to the degree to which they are used. Educators in the classroom think that implementing the examination in the primary classes is challenging to produce, while it demands time and charges for new materials (Klein, et al., 2002). Although these ideas in the instruction of mathematics in the review may already exist, the knowledge of the classroom schooling learners in their powers to develop mathematics in the examination is one of the determinants that may hinder them from using it in their occupation in the future.

In illustration of the influence of self-efficacy and the part performed in the institutional performance of the teacher, the researchers applied to the teachers in the pre-service qualification degree. Multiple subjects ought to decide to review every development about self-efficacy in developing mathematics among the students of the degree supervisor and to define their relationship to a number of variables.

In research by Riggs (2000), the purpose signified to measure this impact of gender on pre-service and in-employ basic teaching teachers on their own ability in teaching mathematics. The research sample consisted of 331 in-service educators and 210 pre-service educators in America. The data were obtained applying the self-efficacy determination module, Science Teaching Efficacy Belief Instrument Form B (STEBI-B) produced by Riggs (2000). Outcomes explained which the scale of individual self-efficacy (field 1) in the teaching of mathematics in males was more important in analytical terms than that of females in both samples. While there was no suggestion of the influence of gender in the expectation of products.

Sarikaya (2004) studied the level of self-efficacy and its relationship to the level of objective information and inclinations towards developing mathematics. The sample of the study consisted of 747 scholars in the area of primary training in nine Turkish universities. The data were solicited using the self-efficacy scale (STEBI-B), the achievement test in science and the coarse scale. The results showed that the level of self-efficacy in teaching mathematics in the sample was normal, that their level of scientific knowledge was low, and that their attitudes moving education mathematics were positive. The results also register that the level of scientific information and trends towards the education of mathematics provide a statistical significance in improving the level of self-efficacy in its dimensions (personal and output expectation).

Cakiroglu et al (2005) carried a comparative examination of self-efficacy in the teaching of science by pre-service primary training instructors. The study sample consisted of 100 Turkish educators and 79 American educators. The efficiency test function (STEBI-B), published the results of the two teams on the performance review in the two recruitment department.

2.1.3. Sources of self-sufficiency

People are knowledgeable of their effectiveness on the support of their development with four main sources. The most powerful way to create a great feeling of efficiency is by testing experiences and life variables. These sources are:

1. **Experiences and successes:** The successes accomplished by the original strong belief in self-efficacy and the skills of failure experienced by the single drop from the efficiency of self, especially if the breakdown occurred before there is a sense of efficiency. Mathematics competition includes points of achievement and frustration. It depends on teachers' method of performing regression experiences as great as they are an indispensable part of mathematics, especially computation in elementary and middle school (Rateb, 2005). In other words, when the teacher encounters many experiences during successful mathematics competition, this supports his sense of adequacy and strengthens the need for more job satisfaction.
2. **Alternative experiences taken from the models:** Many cognitive, sensitive and social replies are gained by following a model that concentrates on one's observation of the other's behavior. When the teacher has skills and principles that have self-efficacy in mathematics at a great level, it does it more comfortable to create self-efficacy. This is confirmed by the theories of Pandora and Weinberg, which is called modeling approach (Gould & Weis, 2003).
3. **Verbal persuasion:** Is one of the causes that raise the expectations of self-efficacy notwithstanding being the most vulnerable sources, but it is easy. This is often observed in the field of mathematics that the teacher gives oral replies and verbal communications with the students to assure them that they have skills to strongly implement a particular performance.
4. **Emotional excitement:** is another source of information that affects self-efficacy in situations where problems exist for the teacher. People rely on emotional agitation to judge their anxiety and weakness in the effort. Where anxiety contributes to determining students' self-efficacy expectations.

2.1.4. Characteristics of self-sufficiency

There are several characteristics of self-efficacy people, as stated by Bandura (2003):

1. Characteristics of persons of high self-efficacy (*who have a strong belief in cadre*): They accept difficult tasks and regard them as a challenge that must be mastered. They do not consider it a threat that they must avoid, have a great deal of responsibility, and therefore set goals they want to achieve, think logically, and have the ability to withstand high energy in the pressures they face.
2. Characteristics of individuals with low self-efficacy (*who doubt their abilities*): They move away from difficult tasks. They see these tasks as threats to their personality, they have low ambitions, they focus on the failed results, and it is not easy to get out of trouble (Khalifa, 2011). It is clear from the above that a person with high self-efficacy has self-confidence, ability to take responsibility for achieving goals and dealing in difficult situations, and creativity in problem solving.

2.1.5. Self-efficacy scale

This study involved the standards used to regulate the self-efficacy of teachers and were used to represent teachers' belief in their ability in mathematics. So that the researcher performed a type of these models. Although there is a variety of experimentation in the field of self-efficacy measures.

In this study, the researcher used the measurement used by Işıksal and Aşkar (2003), so that this measure consists of the following dimensions:

1. Mathematics in arithmetic, algebra, and geometry.
2. Use mathematical skills in the daily life of the functions and mathematical tasks that contain mathematics.
3. Including subjects related to mathematics and mathematics courses.

2.1.6. Self-efficacy measure

With review models, the criteria applied to evaluate self-efficacy changed significantly in research reading. Where the majority of studies of self-efficacy studies were carried through a self-report scale, residual knowledge managing the range of structured interviews. In order to obliquely include the number of motivational determinants between attitudes, inclusive recognized self-efficacy.

Measures intended to include self-efficacy in content vary depending on the use of regular standards. Only the issue guided to the study sample appears in the form of a historical problem. It may come in the form of a correct mark on one page or the standard of sentences in a statement to express clearly the self-efficacy of the subject to be measured. Some of the measures were self-efficacy for assessing broader skills, especially in the range of languages. In Table (2.1) the researcher collected a series of studies, and it has specificity in measuring self-efficacy including communication within self-efficacy measurement also assignment standards.

2.1.7. Self-efficacy and education

Self-efficacy has moved given to affect institutional achievement with its influence on motive, performance, and self-efficacy. Motivation researches were determined that three motivation symbols (choice from exercises, perseverance, and application) are affected by self-efficacy. Its mean Bandura (2001) discovered teachers including a great understanding of observed self-efficacy remained reasonable to wish to advance the assignment of low self-efficacy teachers. Schunk (2001) located the great level teachers continued to feel self-sufficient long and have more flourishing in challenging institution assignments than low-self-efficacy teachers. They ascertained teachers amidst a more influential sensation of self-efficacy explained more difficulties and chose to rework problems more than teacher's comparable office they arranged a deep understanding like self-efficacy.

Table 2.1. Specificity of self-efficacy measure and correspondence between self-efficacy measure and criteria task

Author (date)	Specificity of self-efficacy measure	SE measure in the study: Described, Included, Not defined	Correspondence between self-efficacy measure and criteria task: Low, moderate, or high
(Anderman, 2003)	Moderate specificity: items centering on broad domain of English class	Included, e.g., “Even if the work in English is hard, I can learn it.”	Low: “Since reading and writing are integral parts of all academic work for early adolescents, we examined the effects of motivation toward reading and writing on this overall measure (CTBS) of academic performance” (p. 7).
(Bruning, Shell, & Murphy, 2004)	Moderate specificity: two scales, assessing S.E. for a variety of writing tasks and writing skills.	Described: “One subscale contained general reading or writing tasks of varying difficulty and the other consisted of component skills involved in reading or writing” (p. 7).	Moderate: Task involved essay writing. while SE measure assessed confidence for a variety of writing tasks.
(Evans, 2001)	Student interviews.	Not defined.	Not known.
(Graham & Harris, 2003)	High specificity: measures S.E. to write a “made-up story.”	Included: “subjects were read 10 items probing self-efficacy for writing a ‘made-up story’” (p. 356).	High: Criteria task involved writing a “made-up story.”
(Graham & Harris, 2004)	High specificity: measure assesses perceived ability to write and revise writing.	Described in depth: “The questions measured the students’ perceived ability to write an essay that had a ‘good’ beginning...” (p. 206).	High: Criteria task involved writing essays, which were scored according to elements assessed in self-efficacy measure.
(Graham, Schwartz, & MacArthur, 2001)	High specificity: measures perceived S.E. for writing domain as well as social comparison.	Included: e.g., “When writing a paper it is easy for me to get ideas.” and “When my class is asked to write a ____, mine is one of the best” (p. 241).	Moderate: Criteria task was an assessment of knowledge of revising skills
(Page-Voth & Graham, 2003)	High specificity: assesses confidence for writing essays	Included: Six items beginning “When I write an essay...” (p. 233).	High: Criteria task was writing three essays.
(Pajares & Johnson, 2006)	High specificity: measures confidence to perform certain writing skills.	Described: “consists of 8 items that ask students to rate their confidence that they can perform certain writing skills (e.g., ‘correctly punctuate a one page passage’” (p. 166).	High: “Criteria for scoring (essay) were the same as those on which students were asked to assess their writing efficacy” (p. 166).

Studies of performance have shown that the self-efficacy of the teacher is undoubtedly compared to the educational attainment of the pupils and thus to the school as a whole. This connection with self-efficacy and achievement too gained support from areas other than educational achievement. However, in cases where educational self-efficacy studies survive for teachers, they maintain the association between self-efficacy and scholastic performance (Ozdamli & Uzunboyly, 2015). The researches carried at the 2000s showed that teachers' self-efficacy feelings affect motivation and achievement. The area interest for the current study is the gender differences in self-efficacy reported in current research. Gender differences, self-efficacy of teachers and scientific abilities, as well as planning the relationship between their acceptances of technology techniques.

2.1.8. Self-efficacy and education

If the self-efficacy of the teacher depends mainly on past achievements and frustrations, we need to take a look at the situation in which the teacher is addressing these difficulties. Although there are a lot of challenges and learning at home, much of Teacher's Time is employed in building throughout the school year.

When you taking into the description that the teacher gets 8 hours of sleep per day, and goes to school from 8:30 am to 3:15 pm, then the teacher spends about 54-55% of the rest of the day waking hours at school. The classroom is a challenging environment where there are many opportunities to learn, achieve and explore the teacher. There, they are performed with school work, social challenges, fitness challenges, and many other achievement difficulties. The teacher, despite the subject, has the opportunity to enhance his own self-efficacy without even achieving it.

At the beginning of the school year, most teachers start with a clean list. It is said, at the beginning of the year, that hard work will certainly increase the chances of success in the classroom is a credible statement. Unfortunately, those who do not experience success throughout the year, or do not get positive feedback, may reduce their efforts. May change their self-efficacy because they believe that although some teachers can succeed because of their hard work, they do not have the personal skills or the means to succeed in school (Tollefson, 2000).

However, for key experiences to promote self-efficacy, mission success must be attributed to itself, not to external factors or to luck, fate, etc. Therefore, it is not desirable for the admissions director to perform the easiest tasks of the teacher to help them feel that they have succeeded, because it is not difficult for them to complete something they have already mastered (Uzunboyly & Kinik, 2018). It is also not in the interest of the teacher to give him a more difficult task but to give them help in completing the task. Because they will attribute success to the help of the manager and not themselves (Tollefson, 2000).

In a similar observation, successful schools tend to have higher expectations for their teachers and provide them with more challenging assignments. The support and confidence of teachers tend to help increase the overall self-efficacy of school students. Conversely, schools spend less time individually with teachers, spend less time monitoring and progressing, and lessen their teachers' role in terms of education, to produce less successful teacher (Santrock, 2003).

2.2. Mobile technologies acceptance model

2.2.1. Mobile technologies

The tremendous technological development of the past decade has led to tremendous changes in human lifestyles, and this era of computer, information and communications technology has become the era of digital technology or the age of information technology. This has included the changes created by modern technology changes in the field of education, where changed objectives, areas, methods, and methods and emerged new terms and names of new methods of education, including re-education, direct education, distance education, and education through mobile and others, and all are looking at employment Digital technology in the process of pedagogy (Uzunboylyu, et al, 2017).

In the era information technology or so-called digital age, knowledge collection is no longer the primary goal of the education process. The primary objective was to widen the horizons of knowledge and to present more important objectives than mere knowledge acquisition. Traditional methods of education are no longer suitable for the achievement of new goals. Teachers' roles have also changed and new directions have been taken in line with the new goals harmonized with the era of information technology.

2.2.2. Mobile technologies acceptance model

The most important goal of education in the digital age is to emphasize fundamental skills like thinking, problem solving and decision-making. These skills have become the basis of the education process, in order to prepare students and teachers who are able to adapt to a rapidly changing society, because the society is characterized by rapid knowledge generation and frequent variables.

The characteristics of this age require individuals who have the ability to learn self and continuously, and this can only be achieved if the person driven by internal motivation imposed by the technological education environment. There is no longer a specific time for learning and attending school or university, but a person can learn at any time and under any circumstances as long as he can deal with digital technology and has the motivation to learn beyond the limits of time and place (Caliskan, et al, 2018).

Mobile devices such as mobile phones, smart phones, tablets, pads, laptops and laptops allow access to the Internet, resources and information available to students anywhere at any time (Teo, 2007). Innovations in mobile devices enable students and teachers to access academic and social applications such as content management system for study materials and Skype courses for peer-to-peer course discussions. Mobile technologies allow students and employees access to their lectures and other course group members via e-mail, video networks (such as Skype), additional online-supported resources, and course documents (Donaldson, 2011).

E-learning users interact with educational information resources while away from their usual learning environment, such as a classroom or desktop computer. Mobile learning enables students and teachers to manage their time, complete courses or study assignments while traveling or working away from campus (Herrington & Herrington, 2017). Providing mobile academic resources is not enough to impress students. And that user resistance to technology remains significant with the growing role of information technology in academia. Information technology acceptance models are one way to examine variables that affect students' use of mobile devices.

The implementation of technology in education was found to promote learning in the formal classroom. However, mobile technology can be applied as a link between formal and informal learning platforms where learning takes place both in the formal environment and outside the classroom. Many researchers argued that changes in learning environments had created conditions conducive to the educational application of mobile technologies within formal education. With the spread of mobile technology and its potential to implement education in higher education (Wang & Shih, 2009). The potential impact of mobile devices on tertiary education and their impact on lifelong learning opportunities remains unclear, a sophisticated area of study. However, it is not known whether these mobile devices serve the purpose of social communication as well as to help the learning needs of teachers.

In this study, the researcher will measure the extent to which teachers can adapt to the mobile model. Several studies have included acceptance of mobile learning in developed countries such as the United States, Canada, and Australia, but there are rare studies in these studies on teacher acceptance and use of mobile learning in developing countries. As such, the present study sought to answer how teachers use

their mobile phones to learn and the extent of the relationship between self-efficacy of teachers in mathematics (Kuimova, et al, 2018).

2.2.3. Definition of Mobile technologies acceptance model

UGUR & TURAN (2016) defines the Mobile technologies acceptance model as the tool developed to monitor the user's perceptions of any new technology through specific factors including the impact on the desire to use that technology in the future. (Farid, 2015) defined it is an instrument developed to monitor the user's access to any new technology through specific factors involved in it to affect the desire to use that technology in the future. And Dizon (2016) is a model created by behavioural and external factors that help measure the effectiveness of support technology based on learning applications of mobile adaptation to enable students to learn.

The researcher in this study is a model, invented by Davis (2015), which consists of behavioural and external factors that help measure the effectiveness of support technology based on adaptive mobile learning applications to enable teachers to perform their role with the highest self-efficacy.

2.2.4. Importance of Mobile acceptance models

Models of acceptance of mobile technologies contribute to:

1. Provide guidance on which adaptive application designers can be based on the detection of factors and gaps that affect the effectiveness of technology to support based on adaptive mobile learning applications to enable teachers to transfer knowledge and which may help in revising the tools to improve these applications to deal with the students.
2. The researcher proposes a model to accept the technology of adaptive learning applications and by providing material information and presentation to the mathematics teachers in order to benefit from it as part of the experiment to be applied, since the study will be applied to a sample of school teachers in North Cyprus.
3. The importance of research stems from the needs and nature of teachers who always need support and support by employing adaptive learning applications to

improve their ability to impart knowledge. This study will contribute to encouraging teachers to adopt mobile technology applications and technologies as they accept them. And thus employ these applications to reduce their dependence on others that may help them to adapt in school life under the transfer of knowledge.

4. The results of this study will show teachers themselves identifying the factors and variables that influence their acceptance of mobile technology models and applications, thus helping them to select more mobile computing applications available on their mobile phones that help them adapt and transfer knowledge in other areas of life.

2.2.4. Factors mobile technologies acceptance model

Ugur and Turan (2016) developed a framework for evaluating technology acceptance as a way to measure acceptance of the technology. The model is based on the fact that whenever the user's view of the new technology is as easy to use and useful as ,there is a positive trend towards it. And thus the desire or motivation to use it,using these factors. **Figure (1)** follows the relationship between the factors that the researcher modified to suit the study to be done on the sample of teachers in Northern Cyprus:

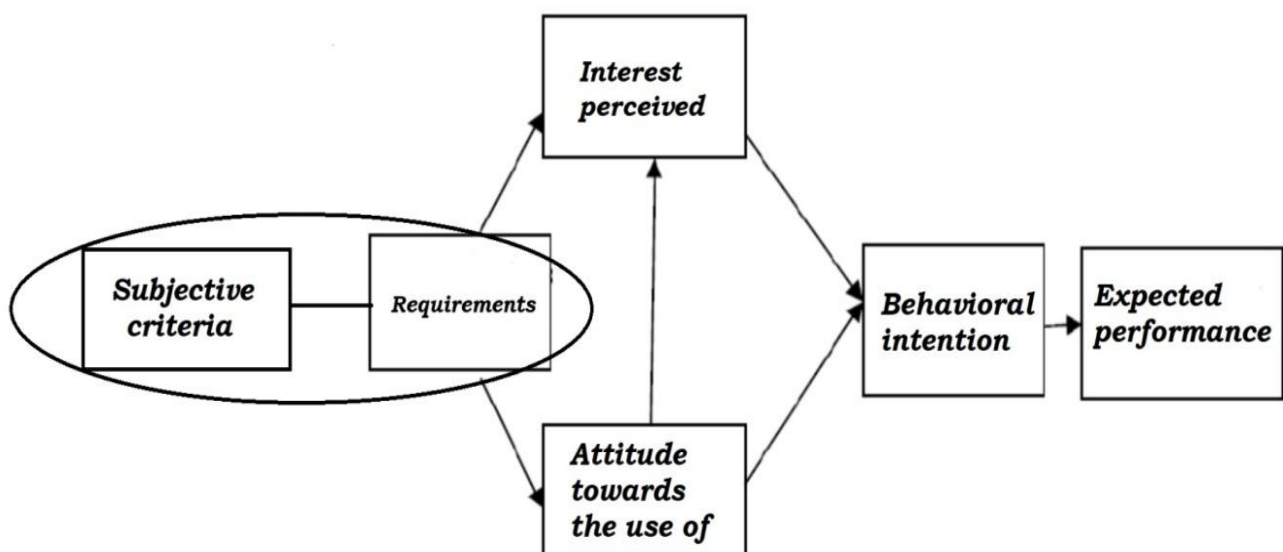


Figure 2.1 Factors mobile technologies acceptance Model

- B.** applications that meet the needs of teachers. It also questions to what extent mobile applications are compatible with what a teacher wants to do with a smartphone or tablet. The teacher also questions how well mobile applications help teachers in their learning process. She also questions whether the teacher downloads downloaded mobile phone applications about the services needed by the teacher? Also download apps for apps in the app store (app store, google play store, etc.). Do I use mobile apps a lot because I need to use them? Do I need to use mobile apps on my phone or tablet?
- C. Subjective criteria:** Here the teacher asks about the people around him do you think that mobile phone applications are useful. Does the teacher believe that these applications are loved by the community and the people around him?
In addition to doing people around the teacher believe it's using mobile apps? Are characters or the community encouraging the teacher to use mobile phone applications? And to what extent does the teacher insist on using for mobile phone applications?
- D. Attitude towards the use of:** In this regard, the teacher asks how much he wants to use the most popular mobile applications (fashion). Is he one of the first to experiment with the new mobile phone applications in the school and did you prefer to be one of the first to experiment with the new mobile applications? New mobile applications. Do you want you're mobile to be the most modern variation? Are you among the beginning to welcome new technologies?
- E. Behavioural Intention:** Here the teacher asks Do I better use mobile phone applications instead of traditional? Do you think that as a teacher I will continue to use mobile applications in the future? Will I definitely continue using mobile applications? Are you going to use mobile applications instead of traditional ways when dealing with your work as a teacher?
- F. Interest perceived:** Do mobile apps make a teacher's daily work better? Mobile phone applications make the teacher more productive? Do mobile apps make the teacher more effective in his daily work? Can mobile apps improve teacher performance in their daily work?

G. Expected performance: Does the teacher not realize how much time has passed when he has no action using mobile applications? Does the teacher find flexibility because I can access mobile applications where I want to? Does the teacher find flexibility because he can access mobile applications at any time?

Chapter III

3. METHODOLOGY

In this chapter, first, the design and procedure of the study are presented. Then, the participants, data collection tools, and the process of instruction are described in detail. Finally, data analysis of the study is stated.

3.1. Study Design

The descriptive analytical method was used. The analytical descriptive approach examines the phenomenon as it is in fact, and it is as a precise description and expressed in qualitative and quantitative terms, and then analyzed to reach conclusions and recommendations.

3.2. Research Process

The basic steps of the research process were followed accordingly. The topic was selected, and its main concepts were stated too. The background of the topic/ study was collected from available reference and extracted from scholars' works. All that information was examined, evaluated and refined to utilize or employ the matched ones with the said topic/ study.

3.3. Sample Selection

The sample of the study consisted of 30 mathematical teachers of mathematics in primary and secondary schools in Northern Cyprus and **Table 3.1** shows the distribution of teachers in four schools in North Cyprus and the distribution of the study sample by geographical location in Northern Cyprus. It is shown from the table that the percentage of teachers is almost equal except in Guzelyurt, where repetition is 5 teachers by 16%.

Table 3.1. The distribution of teachers in four schools in North Cyprus.

Name of School	Location	Sample	%
Gazimağusa Türk Maarif Koleji	Famagusta	9	30
Güzelyurt Türk Maarif Koleji	Guzelyurt	5	16
19 Mayıs Türk Maarif Koleji	Girne	8	27
Türk Maarif Koleji	Lefkosa	8	27
Total		30	100

3.4. Data collection

3.4.1. Data Collection Method

To collect the necessary data, a descriptive - quantitative search method was implemented. The questionnaires were distributed to participants who were selected by the academic advisor of the researcher in March 2019. There were random discussions to enlighten participants and university faculties, to explore the goals and objectives of questionnaires.

Primary data collected through questionnaires distributed at different time intervals for the same respondents (participants). The pre-questionnaires were distributed, and the first questionnaire consists of 32 questions and the second questionnaire from 15 questions.

3.4.2. Data Collection Instruments

Mobile Technologies Acceptance Model Scale was selected from the study of (UGUR & TURAN, 2016) as in Annex (1). The questionnaire was modified in the sense that the researcher addressed the final questionnaire in the study of (UGUR & TURAN, 2016) , which does not contain weak paragraphs.

To assess the attitudes of mathematics teachers to accept mobile phone applications, the questionnaire is composed of six axes in 32 topics:

1. Requirements.
2. Behavioral Intention.
3. Attitude towards Use.

4. Perceived Benefit.
5. Subjective Norms.
6. Performance Expectation

In addition to the researcher's adoption of the self-efficacy questionnaire for mathematics teachers in 15 different subjects in mathematics. Knowing that the researcher relied on the same measure as in the study of (IfiIKSAL & AfiKAR, 2003) as in Annex 2, the questionnaire is composed of axes in 15 topics:

1. Calculating the total price of tools purchased from a shopping mall.
2. The distance between home and school is approximately 20 km. calculating the time of arrival from school when the speed of the shuttle vehicle is known?
3. Find the image of 808008 in the flat mirror?
4. The figure on the right shows the Seat Layout in a movie theatre. According to this; locate seat number on a ticket.
5. On the adjacent coordinate plane, the common route of the two ships is given. If the coordinates of the points where both ships are located and will arrive, find the coordinates of the point where these two ships will encounter.
6. To be able to solve first order unknown equations.
7. Solving problems using first-order equations with one unknown.
8. Symmetry.
9. Coordinate system.
10. Accurate Charts.
11. I can find the solution set of the equation.
12. A mother is 48 years old and her daughter is 9 years old. How many years later I find that the mother's age would be 4 times the age of her daughter?
13. I can find the axis of symmetry of the figure on the side.
14. I can show the following points in the coordinate plane.
15. I can draw the graphs of the line of equations given below in the same coordinate plane and find the point of intersection.

The elements of the participants request to indicate the level of their agreement on the Likert scale of 5 points (5 strongly agree, 4 agree, 3 neutral, 2 oppose or strongly oppose 1). Their responses are based on academic experience. The two questionnaires were administered in the theoretical chapter of teachers in the light of demographic characteristics for respondents who have been acquired such as

gender, years of experience, type of mobile phone and the number of hours spent on the phone. (0-5, 6-10, 11-15, more than 15 years); type of mobile phone (normal, intelligent); how much time do social media use on a day One? (I do not use, less than one hour, one to two hours, 3 hours or more).And the second questionnaire (Always trust, Mostly trust, Sometimes trust, Rarely trust, Never trust).The attitude of each mathematics teacher towards acceptance of mobile applications and self-efficacy was assessed. Its range ranges from 1 to 5 degrees.

3.4.3. Data Analysis

The Statistical Package for Social Sciences (SPSS) (32) was used to analyze the quantitative data generated by the two questionnaires used in Mohammed and Mahmoud's study to assess changes in the attitudes of professional participants. For statistical analysis, gender, years of experience, type of mobile phone and the number of hours spent on the phone. (0-5, 6-10, 11-15, more than 15 years); type of mobile phone (normal, intelligent); how much time do social media use on a day One? (I do not use, less than one hour, one to two hours, 3 hours or more).And the second questionnaire (Always trust, Mostly trust, Sometimes trust, Rarely trust, Never trust).

The main component analysis was applied to determine the components that greatly explained the correlations between responses, ANOVA for variance analysis, T-tests for independent samples, and the Alpha Kronbach calculation of internal consistency and the used descriptive statistics (frequencies and graph) to explore an agreement within the group, each major component.

Table 3.2. Frequency Tables: Statistics of Demographic Characteristics (Gender)

		Frequency	Percent	VP	CP
Valid	Male	11	36.7	36.7	36.7
	Female	19	63.3	63.3	100.0
	Total	30	100.0	100.0	

* V.P. (valid percent) is the percent when missing data are excluded from the calculations, where C.P. (cumulative percent) calculates the percentage of the cumulative frequency within each interval.

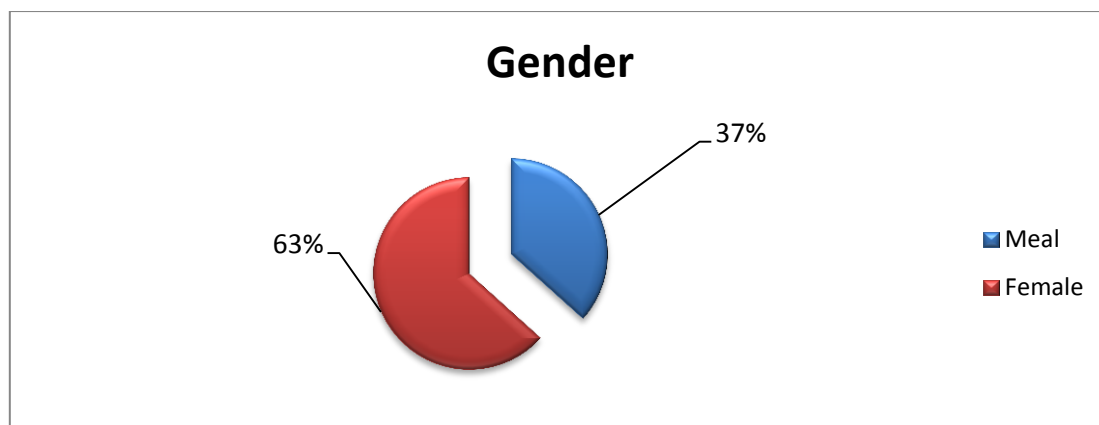


Figure 3.1. The total respondents in the questionnaire were 30 different mathematics teachers with 63% female 37% male.

Table 3.3. Frequency Tables: Statistics of Demographic Characteristics (Years of Experience)

	Range	Frequency	Percent	V.P.	C.P.
Valid	0 - 5	4	13.3	13.3	13.3
	6-10	4	13.3	13.3	26.7
	11-15	7	23.4	23.4	50
	More 15 year	15	50	50	100
Total		30	100	100	

Major Finding: From Table 3.3, most of the respondents were between the age group of More 15 year with percentage of 50%

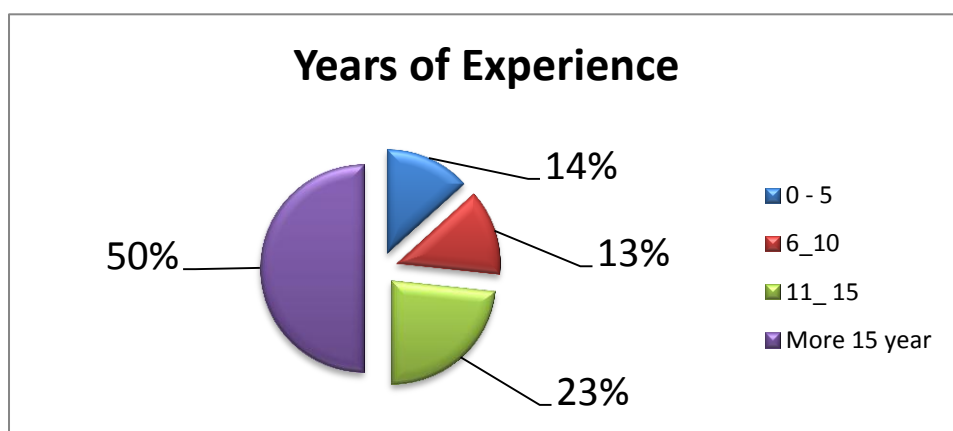


Figure 3.2. The total respondents in the questionnaire were 30 different mathematics teachers with Years of Experience

Table 3.4. Frequency Tables: Statistics of Demographic Characteristics (Type of mobile phone)

	Type	Frequency	Percent	V.P.	C. P.
Valid	Smart	16	53.3	53.3	53.3
	Normal	14	46.7	46.7	100
	Total	30	100	100	

Major Finding: Type of mobile phone of the respondents was Smart with percentage of 53.3 %.

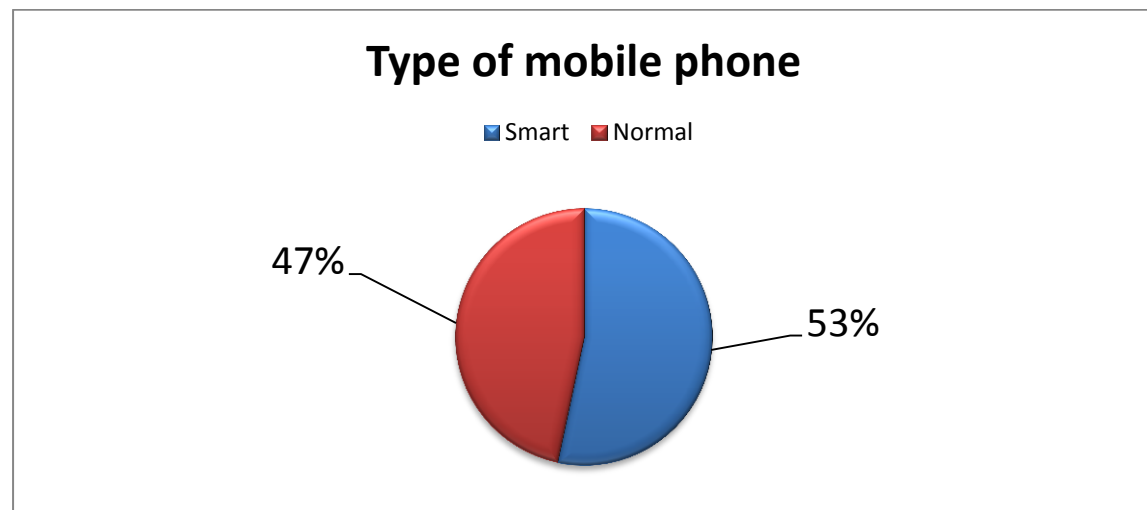


Figure 3.3. The total respondents in the questionnaire were 30 different mathematics teachers with Type of mobile phone

Table 3.5. Frequency Tables: Statistics of Demographic Characteristics (How long do you use social media in one day?)

	Use of social media	Frequency	Percent	V. P.	C. P.
Valid	I do not use	2	6.7	6.7	6.7
	Less than 1-hour	7	23.3	23.3	30
	1 to 2 hours	11	36.7	36.7	66.7
	3 hours or more	10	33.3	33.3	100
	Total	30	100	100	

Major Finding: Use of social media was as follows: I do not use 6.7 %, less than 1-hour 23.3 %, 1 to 2 hours 36.7 %, and 3 hours or more 33.3 %.

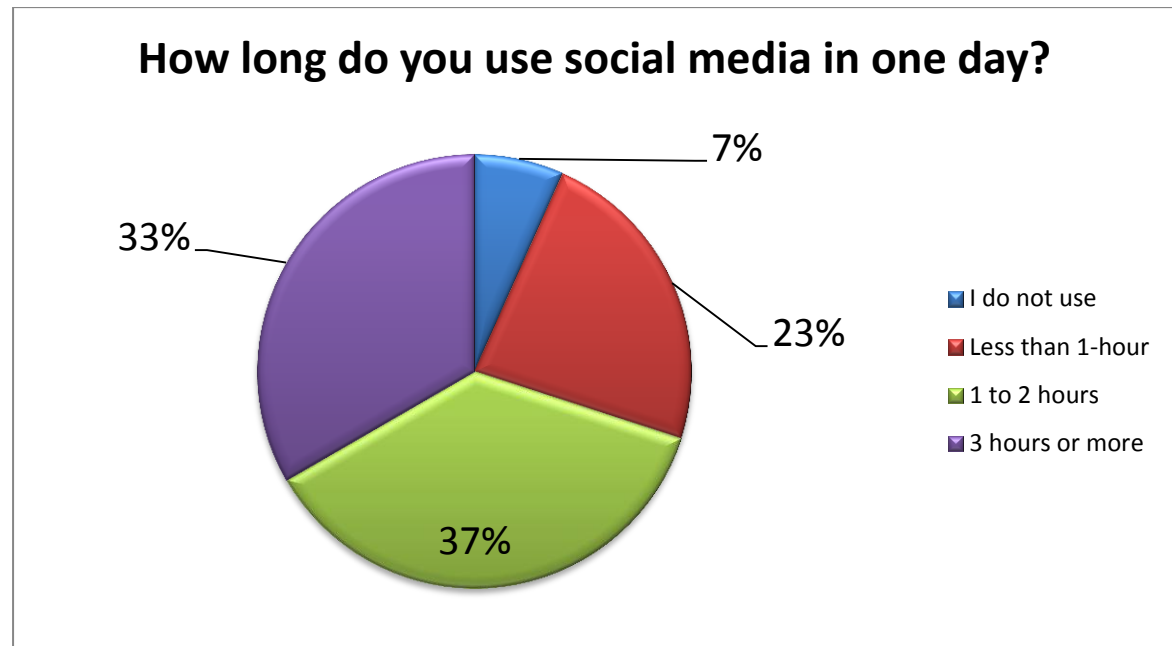


Figure 3.3. The total respondents in the questionnaire were 30 different mathematics teachers with How long do you use social media in one day?

Reliability of the MTAM

Internal consistency was measured using Cronbach's alpha coefficient. For the overall MTAM, Cronbach's alpha was 0.944. It has been argued that a minimum of Cronbach's alpha coefficient of 0.70 reflects adequate internal consistency, and an alpha less than 0.70 reflects inadequate reliability.

SCALE MTAM: All Variables:

Table 3.6. Case Processing Summary for Mobile Technologies Acceptance Model (MTAM)

		N	%
Cases	Valid	30	96.8
	Excluded ^a	1	3.2
	Total	31	100

*A-List wise deletion based on all variables in the procedure.

Table 3.7. Reliability Statistics for Mobile Technologies Acceptance Model (MTAM)

Cronbach's Alpha	N of Items
0.94	32

Table 3.8. Reliability Statistics for all fields in SCALE Mobile Technologies Acceptance Model (MTAM)

Fields		Number of questions	Cronbach's Alpha
Requirements	R	7	0.87
Behavioral Intention	BI	6	0.63
Attitude towards Use	AU	6	0.63
Perceived Benefit	PB	5	0.86
Subjective Norms	SN	5	0.87
Performance Expectation	PE	3	0.74
Mobile Technologies Acceptance Model	MTAM	32	0.94

Main Finding: Cronbach's Alpha reliability test for the questionnaire compared to the six variable data was recorded as 0.94 is very strong in social sciences.

Reliability of the SE:

Internal consistency was measured using Cronbach's alpha coefficient. For the overall SE, Cronbach's alpha was 0.75. It has been argued that a minimum of Cronbach's alpha coefficient of 0.70 reflects adequate internal consistency and an alpha less than 0.70 reflects inadequate reliability.

SCALE SE: All Variables

Table 3.9. Reliability Statistics for Self-efficacy (SE)

Cronbach's Alpha	N of Items
0.75	15

Main Finding: Cronbach's Alpha reliability test for the questionnaire compared to the fifteenth variable data was recorded 0.75 is regarded as acceptable in social sciences.

3.5. The scale level of the five-field study instrument:

The range of scale ranges can be determined by the following steps:

1. Scale range

Scale Range = Highest Questionnaire - Minimum Questionnaire = 5 - 1 = 4

2. Calculate the range of the level

Range = Scale Range / Number of Degrees = 4 / 5 = 0.8

In light of this result, the value of the quintile quintiles was determined as shown in the following table 3.10:

Table 3.10. The value of the fifth assessment of Mobile Technologies Acceptance Model (MTAM) scale and Self-efficacy (SE)

Mean Range	Classification	Degree
1 – 1.8	1	very low
1.81 – 2.6	2	Low
2.61 – 3.4	3	Medium
3.41 - 4.2	4	High
4.21 - 5	5	Very high

3.6. Methods and statistical tests to study

The following statistical methods were used:

- 1) Cronbach Alpha to calculate the coefficient of reliability.
- 2) Spearman Brown's equation for reliability to adjust the reliability coefficient.
- 3) Pearson correlation coefficient to calculate the correlation coefficient and the answer to the hypotheses related to the sample.
- 4) T-test to find differences between two independent samples.

- 5) One way ANOVA to find differences between three or more variables for independent samples.

3.7. Ethical Considerations

Originally, the study had been granted approval by the Scientific Research Ethics Committee – Near East University on 26 February 2019, Appendix 3. When considering ethics in educational and social contexts, there are basic principles of research ethics were applied. These five principles had been hewn from the socio-psychological context to respect the rights of participants. However, informed consent - as one of the cornerstones of ethics – was distributed to the selected sample group, after an intensive orientation and clear instructions about the whole study. There was no risk of harm, all anonymities and confidentiality were protected, the restricted observation was maintained to minimize deceptive practices, as well as, provided the rights to withdraw from participation at any stage .

Permission has been sought to allow the study in each of the selected schools through the official decision of the Turkish Ministry of Education for primary and secondary schools as in Annexes 4 and 5. Approval has been obtained and the researcher has been given access to the selected schools. Care was taken to ensure that all data obtained were kept confidential and will be destroyed. Furthermore, to maintain confidentiality no names were attached to any of the methods of data collection.

Chapter IV

RESULTS

Within this chapter, the collected data was analyzed using quantitative methods to answer the research questions. This study was will determine the relationship between teachers' self-efficacy perception and Mobile technologies acceptance model. This chapter is about the results obtained from data analysis. Statistical analyses of data collected from the two questionnaires were conducted using the Statistical Package for the Social Sciences (SPSS) program to obtain the results of the study presented in this chapter.

The Study Questions

- **The First Question:**

The results of the first question, which states: *What is the degree of mobile technologies acceptance model by mathematics teachers in North Cyprus?* The arithmetical middles, the standard deviation, and the degree of support for the question of the questionnaire were used and the table (4.1) shows that:

Table 4.1. The degree of support for the question of the questionnaire were used for sixth fields of Mobile Technologies Acceptance Model (MTAM)

	Mean	Std. Deviation	Classification	Degree
Requirements	4.25	0.62	5	Very high
Behavioral Intention	4.37	0.40	5	Very high
Attitude Towards Use	3.90	0.84	4	High
Perceived Benefit	4.36	0.47	5	Very high
Subjective Norms	4.12	0.79	4	High
Performance Expectation	4.30	0.68	5	Very high
MTAM	4.22	0.52	5	Very high

From table (4.1), which expresses the means and the standard deviations of the responses of the sample members to the acceptance of Mobile Technologies Acceptance Model, the mean of the total score (4.22) and the standard deviation (0.52). And shows that the six of Mobile Technologies Acceptance Model fields were at a very high level except for fields Attitude towards Use and Subjective Norms were at a high.

The means and the standard deviations of the responses of the study sample individuals were extracted on the questionnaire paragraphs for each field separately, the paragraphs expressing Requirements and the table (4.2) shows that:

Table 4.2. The degree of support for the question of the questionnaire were used for the Requirements of Mobile Technologies Acceptance Model (MTAM)

	Mean	Std. Deviation	Classification	Degree
Mobile applications are compatible with what I want to do with a smartphone or tablet.	4.17	1.02	4	High
Mobile applications help me.	4.27	0.82	5	Very high
The services offered by mobile applications meet my needs.	4.33	0.71	5	Very high
I'm downloading mobile applications about the services I need.	4.17	0.83	4	High
I'm downloading applications for my needs from the app store (app store, google play store, etc.).	4.20	0.84	4	High
I use some mobile applications more often because I need them.	4.30	0.79	5	Very high
I need to use mobile apps on my phone or tablet.	4.37	0.71	5	Very high
Requirements	4.25	0.62	5	Very high

The above table, which expresses the means and the standard deviations of the responses of the sample members, indicates that the means of the Requirements

(4.2571) and the standard deviation (0.62933). This indicates that the field of Requirements related to the acceptance of mobile technology came very high. The researcher calculated the means and the standard deviations of the responses of the sample members of the sample on the second questionnaire fields that express Behavioral Intention related to Mobile Technologies Acceptance Model and the table (4.3) shows that:

Table 4.3. The degree of support for the question of the questionnaire were used for the Behavioral Intention of Mobile Technologies Acceptance Model (MTAM)

	Mean	Std. Deviation	Classification	Degree
I prefer to use mobile applications rather than traditionally.	4.17	0.83	4	High
I believe that I will continue to use mobile applications in the future.	4.50	0.68	5	Very high
I will definitely continue to use mobile applications.	4.33	0.54	5	Very high
I intend to use mobile applications when I handle my work.	4.40	0.56	5	Very high
I intend to use mobile applications frequently.	4.47	0.62	5	Very high
My goal is to use mobile applications instead of traditional methods when dealing with my work.	4.40	0.77	5	Very high
Behavioral Intention	4.37	0.40	5	Very high

The above table, which expresses the means and the standard deviations of the responses of the sample members, indicates that the means of the Behavioral Intention (4.37) and the standard deviation (0.40). This indicates that the field of Behavioral Intention related to the acceptance of mobile technology came very high. The researcher calculated the means and the standard deviations of the responses of the sample members of the sample on the third questionnaire fields that express Attitude towards Use related to Mobile Technologies Acceptance Model and the table (4.4) shows that:

Table 4.4. The degree of support for the question of the questionnaire were used for the Attitude towards Use of Mobile Technologies Acceptance Model (MTAM)

	Mean	Std. Deviation	Classification	Degree
I want to use the most used (fashion) mobile applications	4.10	0.80	4	High
I am one of the first to try new mobile applications.	3.73	1.11	4	High
I would like to be among the first to try new mobile applications.	3.70	1.29	4	High
I like to try new mobile applications.	3.83	0.95	4	High
I want my mobile device to be the newest model.	4.07	1.11	4	High
I am among the first to adopt new technologies and devices.	4.00	1.01	4	High
Attitude Towards Use	3.90	0.84	4	High

The above table, which expresses the means and the standard deviations of the responses of the sample members, indicates that the means of the Attitude towards Use (3.90) and the standard deviation (0.84). This indicates that the field of Attitude towards Use related to the acceptance of mobile technology is high. The researcher calculated the means and the standard deviations of the responses of the sample members of the sample on the fourth questionnaire fields that express Perceived Benefit related to Mobile Technologies Acceptance Model and the table (4.5) shows it.

The down table, which expresses the means and the standard deviations of the responses of the sample members, indicates that the means of the Perceived Benefit (4.36) and the standard deviation (0.47). This indicates that the field of Perceived Benefit related to the acceptance of mobile technology is very high. The researcher calculated the means and the standard deviations of the responses of the sample members of the sample on the fifth questionnaire fields that express Subjective Norms related to Mobile Technologies Acceptance Model and the table (4.6) shows that it.

Table 4.5. The degree of support for the question of the questionnaire were used for the Perceived Benefit of Mobile Technologies Acceptance Model (MTAM)

	Mean	Std. Deviation	Classification	Degree
Mobile applications make my daily work better.	4.37	0.76	5	Very high
Mobile applications make me more productive.	4.43	0.62	5	Very high
Mobile applications make me more effective in my daily work.	4.37	0.61	5	Very high
Mobile applications can improve my performance in my daily work.	4.37	0.76	5	Very high
Mobile applications make it easier for me to do my work.	4.30	0.70	5	Very high
Perceived Benefit	4.36	0.47	5	Very high

Table 4.6. The degree of support for the question of the questionnaire were used for the Subjective Norms of Mobile Technologies Acceptance Model (MTAM)

	Mean	Std. Deviation	Classification	Degree
People around me think mobile applications are useful.	4.20	0.76	4	High
People around me think I should use mobile applications.	4.13	0.97	4	High
People around me think it's a good idea to use mobile Apps.	4.03	1.03	4	High
People around me encourage me to use mobile applications.	4.27	0.94	5	Very high
I can insist on my use of mobile applications.	3.97	1.12	4	High
Subjective Norms	4.12	0.79	4	High

The above table, which expresses the means and the standard deviations of the responses of the sample members, indicates that the means of the Subjective Norms (4.12) and the standard deviation (0.79). This indicates that the field of Subjective Norms related to the acceptance of mobile technology is high. The researcher calculated the means and the standard deviations of the responses of the sample members of the sample on the sixth questionnaire fields that express Performance Expectation related to Mobile Technologies Acceptance Model and the table (4.7) shows that:

Table 4.7. The degree of support for the question of the questionnaire were used for the Performance Expectation of Mobile Technologies Acceptance Model (MTAM)

	Mean	Std. Deviation	Classification	Degree
I don't realize how time went by when I had nothing to do using mobile Apps.	4.30	1.11	5	Very high
I find flexible because I can access mobile applications wherever I want.	4.27	0.74	5	Very high
I find flexible because I can access mobile applications at any time.	4.33	0.54	5	Very high
Performance Expectation	4.30	0.68	5	Very high

The above table, which expresses the means and the standard deviations of the responses of the sample members, indicates that the means of the Performance Expectation (4.3000) and the standard deviation (0.68004). This indicates that the field of Subjective Norms related to the acceptance of mobile technology is very high.

- **The Second Question:**

The results of the second question, which states: ***What is the degree of self-efficacy perception by mathematics teachers in North Cyprus?*** The means, the standard deviation, and the degree of support for the question of the questionnaire were used and the table (4.8) shows that:

Table 4.8. The degree of support for the question of the questionnaire were used for the fifteenth filed of The Self-efficacy (SE)

	Mean	Std. Deviation	Classification	Degree
Calculating the total price of tools purchased from a shopping mall	3.57	1.13	4	High
The distance between home and school is approximately 20 km. Calculating the time of arrival from school when the speed of the shuttle vehicle is known	3.37	0.90	4	High
Find the image of 808008 in the flat mirror	4.13	1.07	3	High
The figure on the right shows the Seat Layout in a movie theatre. According to this; locate seat number on a ticket	3.83	0.95	4	High
On the adjacent coordinate plane, the common route of the two ships is given. If the coordinates of the points where both ships are located and will arrive, find the coordinates of the point where these two ships will encounter	4.10	0.88	4	High
To be able to solve first order unknown equations	4.27	0.78	5	Very high
Solving problems using first-order equations with one unknown.	4.27	0.69	5	Very high
Symmetry	4.13	0.81	4	High
Coordinate system	4.23	0.72	5	Very high
Accurate Charts	4.13	0.62	4	High
I can find the solution set of the equation	4.17	0.69	4	High
A mother is 48 years old and her daughter is 9 years old. How many years later I find that the mother's age would be 4 times the age of her daughter?	4.07	0.82	4	High
I can find the axis of symmetry of the figure on the side.	4.03	0.99	4	High
I can show the following points in the coordinate plane.	3.80	0.92	4	High
I can draw the graphs of the line of equations given below in the same coordinate plane and find the point of intersection.	4.07	1.23	4	High
Self-efficacy	4.03	4.03	4	High

The above table, the researcher calculated the means and the standard deviations of the responses of the sample members of the sample on the second questionnaire that express topics related to self-efficacy indicate that the means of the

total topics (4.03) and the standard deviation (4.03). So indicates that the field of Subjective Norms related to the acceptance of mobile technology is high.

- **The Third Question:**

Which states: *Are there differences in mobile technologies acceptance model and self-efficacy perception among mathematics teachers in North Cyprus due to variables (gender, years of experience, type of mobile phone and the number of hours spent on the phone)?*

The following question stems from the following first hypothesis: *There are no statistically significant differences at a significance level of ($\alpha \leq 00.05$) between mobile technologies acceptance model and self-efficacy attributed for gender variable.* The researcher used the T-test to determine the differences between the two gender groups and the table (4.9) shows that:

Table 4.9. The differences between mobile technologies acceptance model and self-efficacy attributed for gender groups

	Gender	N	Mean	Std. Deviation	t	Sig. (2-tailed)
R	Meal	11	4.32	0.57	0.44	0.66
	Female	19	4.21	0.67		
BI	Meal	11	4.39	0.44	0.16	0.87
	Female	19	4.36	0.39		
AU	Meal	11	3.81	1.03	0.42	0.67
	Female	19	3.95	0.73		
PB	Meal	11	4.40	0.52	0.28	0.77
	Female	19	4.34	0.45		
SN	Meal	11	4.20	0.68	0.41	0.68
	Female	19	4.07	0.86		
PE	Meal	11	4.18	0.65	0.71	0.47
	Female	19	4.36	0.70		
MTAM	Meal	11	4.21	0.5	0.01	0.99
	Female	19	4.22	0.51		
SE	Meal	11	3.96	0.46	0.63	0.53
	Female	19	4.07	0.41		

Table (4.9) indicates that the value of mobile technologies acceptance model Sig. (2-tailed) is (0.99) and self-efficacy is (0.53), which are greater than ($\alpha = 0.05$) and therefore we will accept the zero hypothesis. It is clear that there are no differences between teachers' response rates around mobile technologies acceptance model and

self-efficacy according to the gender variable. The following question stems from the following second hypothesis: ***There are no statistically significant differences at a significance level of ($\alpha \leq 00.05$) between mobile technologies acceptance model and self-efficacy attributed for years of experience variable.*** The researcher used the one way ANOVA to determine the differences between the fourth groups and the table (4.10) shows that:

Table 4.10. The relation between mobile technologies acceptance model and self-efficacy attributed for years of experience variable.

		Sum of Squares	df	Mean Square	F	Sig.
R	Between Groups	1.40	3	0.46	1.20	0.32
	Within Groups	10.08	26	0.38		
	Total	11.48	29			
BI	Between Groups	0.25	3	0.08	0.48	0.69
	Within Groups	4.46	26	.17		
	Total	4.71	29			
AU	Between Groups	4.70	3	1.56	2.57	0.07
	Within Groups	15.83	26	0.60		
	Total	20.53	29			
PB	Between Groups	0.61	3	0.20	0.88	0.46
	Within Groups	5.95	26	0.22		
	Total	6.56	29			
SN	Between Groups	1.69	3	0.56	0.88	0.46
	Within Groups	16.59	26	0.63		
	Total	18.28	29			
PE	Between Groups	1.42	3	0.47	1.03	0.39
	Within Groups	11.98	26	0.46		
	Total	13.41	29			
MTAM	Between Groups	0.89	3	0.29	1.07	0.37
	Within Groups	7.16	26	0.27		
	Total	8.05	29			
SE	Between Groups	0.47	3	0.16	0.85	0.47
	Within Groups	4.85	26	0.18		
	Total	5.33	29			

Table (4.10) indicates that the value of mobile technologies acceptance model Sig. (2-tailed) is (0.37) and self-efficacy is (0.47), which are greater than ($\alpha = 0.05$) and therefore we will accept the zero hypothesis. It is clear that there are no differences between teachers' response rates around mobile technologies acceptance model and self-efficacy according to the years of experience variable

The following question stems from the following third hypothesis: ***There are no statistically significant differences at a significance level of ($\alpha \leq 00.05$) between mobile technologies acceptance model and self-efficacy attributed for type of mobile phone variable.*** The researcher used the T-test to determine the differences between the two groups and the table (4.11) shows that:

Table 4.11. The relation between mobile technologies acceptance model and self-efficacy attributed for type of mobile phone variable.

	Phone	N	Mean	Std. Deviation	t	Sig. (2-tailed)
R	Smart	16	4.03	0.66	2.19	0.037
	Normal	14	4.51	0.49		
BI	Smart	16	4.16	0.41	3.66	0.001
	Normal	14	4.61	0.22		
AU	Smart	16	3.46	0.81	3.61	0.001
	Normal	14	4.40	0.56		
PB	Smart	16	4.11	0.42	3.77	0.001
	Normal	14	4.65	0.35		
SN	Smart	16	3.87	0.80	1.88	0.070
	Normal	14	4.40	0.70		
PE	Smart	16	4.06	0.76	2.17	0.038
	Normal	14	4.57	0.46		
MTAM	Smart	16	3.95	0.52	3.50	0.002
	Normal	14	4.52	0.34		
ES	Smart	16	4.02	0.51	0.19	0.845
	Normal	14	4.05	0.32		

Table (4.11) indicates that the value of mobile technologies acceptance model Sig is (0.002) this value is less than ($\alpha = 0.05$), which means rejection of the hypothesis and the presence of differences due to the (type of phone) variable. Self-efficacy is (0.84), which are greater than ($\alpha = 0.05$) and therefore we will accept the zero hypothesis. It is clear that there are no differences between teachers' response rates around self-efficacy according to the type of phone variable. The following

question stems from the following second hypothesis: ***There are no statistically significant differences at a significance level of ($\alpha \leq 00.05$) between mobile technologies acceptance model and self-efficacy attributed for the number of hours spent on social media*** The researcher used the one way ANOVA to determine the differences between the fourth groups and the table (4.12) shows that:

Table 4.12. The relation between mobile technologies acceptance model and self-efficacy attributed for the number of hours spent on social media

		Sum of Squares	df	Mean Square	F	Sig.
R	Between Groups	0.83	3	0.27	0.67	0.57
	Within Groups	10.65	26	0.41		
	Total	11.48	29			
BI	Between Groups	0.35	3	0.11	0.71	0.55
	Within Groups	4.36	26	0.16		
	Total	4.71	29			
AU	Between Groups	0.39	3	0.13	0.16	0.91
	Within Groups	20.14	26	0.77		
	Total	20.53	29			
PB	Between Groups	0.18	3	0.06	0.25	0.85
	Within Groups	6.38	26	0.24		
	Total	6.56	29			
SN	Between Groups	0.67	3	0.22	0.33	0.80
	Within Groups	17.61	26	0.67		
	Total	18.28	29			
PE	Between Groups	0.98	3	0.32	0.68	0.56
	Within Groups	12.42	26	0.47		
	Total	13.41	29			
MTAM	Between Groups	0.23	3	0.07	0.25	0.85
	Within Groups	7.82	26	0.30		
	Total	8.05	29			
SE	Between Groups	0.36	3	0.12	0.63	0.60
	Within Groups	4.96	26	0.191		
	Total	5.33	29			

Table (4.12) indicates that the value of mobile technologies acceptance model Sig. (2-tailed) is (0.85) and self-efficacy is (0.60), which are greater than ($\alpha = 0.05$) and therefore we will accept the zero hypothesis. It is clear that there are no differences between teachers' response rates around mobile technologies acceptance model and self-efficacy according to the gender variable.

- **The Fourth Question:**

Which states: *Is there a relationship between self-efficacy perception and mobile technologies acceptance model among North Cyprus mathematics teachers?* To answer the question, the researcher used the Pearson Correlation coefficient to find the relationship between of mobile technologies acceptance model and self-efficacy and the table (4.13) shows that:

Table 4.13. The relationship between self-efficacy perception and mobile technologies acceptance model

		MTAM	SE
MTAM	Pearson Correlation	1	0.84
	Sig. (2-tailed)		0.02
	N	30	30
SE	Pearson Correlation	0.84	1
	Sig. (2-tailed)	0.02	
	N	30	30

****.** Correlation is significant at the 0.05 level (2-tailed).

Table (4.13) shows that there is a statistically significant relationship at the significance level ($\alpha = 0.05$) between self-efficacy and mobile technologies acceptance model, and the statistical Sig (0.02) was less than ($\alpha = 0.05$), so there is a great relationship between self-efficacy and mobile technologies acceptance model.

Chapter V

5. Discussion

The theoretical framework of the study depends on the acceptance of technology and self-efficacy of mathematics teachers, which are widely used in the fields of social psychology and acceptance of information systems. The model was rearranged by adding the appropriate variables to the study: gender, years of teaching, type of mobile phone and number of hours spent on social media.

The theoretical framework of the study depends on the acceptance of technology and self-efficacy of mathematics teachers, which are widely used in the fields of social psychology and acceptance of information systems. The model was rearranged by adding the appropriate variables to the study: gender, years of teaching, type of mobile phone and number of hours spent on social media. The results from the sub-study questions were as follows:

1. The results showed that the acceptance of the mobile phone acceptance model, the average overall score of the scale is very high and was very high in four axes, Requirements, Behavioral Intention, Perceived Benefit and Performance Expectation. It was high in two axes, attitude towards Use and subjective Norms. This result is consistent with (Mavis, 2010) and (Sarikaya, 2004) studies and with Study (Uzunboylyu & Kinik, 2018) in terms of attitude towards Use and subjective Norms. The reason for the requirement is so high that mobile applications are used to help the teacher. The services provided by mobile applications meet the needs of teachers. I use them because they need to be touched. Finally, using mobile applications on my phone or tablet is a necessity in this age. It is consistent with (Kuimova, Burleigh, Uzunboylyu, and Bazhenov, 2018) study in that it is a requirement of this age because it has a role in accelerating the educational process and its continuity. In addition to its agreement with (Eshach, 2003) It differs with Sarikaya (2004), where there is a lack of information in education using mobile applications, especially in mathematics. Because of the study at the beginning of this century.
2. The results show that the behavioral Intention is very high and I hope in the following reasons teachers think continuity in the use of future applications. The

intentions of using applications when dealing with problems in work and repetition in their use, apart from using mobile phone applications as an alternative to traditional methods in schools. The result was agreed with (Caliskan, Uzunboylu, and Tugun, 2018), as well as reinforcing life situations with these results. The results showed that the perceived benefit of applications was very high because it makes the teacher more productive and more effective in daily school work, as well as improving performance and facilitating the daily work. And agreed with the study of (Cimsir & Uzunboylu, 2019) and (Shara, 2006) in terms of the large role in the impact on the educational process. The results of the performance Expectation showed a very high degree because teachers did not realize how much time had passed when I had nothing to do with mobile applications. As well as the flexibility to access mobile apps anytime, anytime. So that this result differed with the study of (Stevens & Davis, 2007), which emphasized the difficulty in dealing and lack of flexibility.

3. The special results showed an Attitude towards the use have shown a high degree of portable applications because it is fashion, modern in use, experimentation, and desire to use them. The results for Subjective Norms have shown a high degree because of the belief that mobile phone applications are useful and a new idea is even higher because people are encouraged to use mobile phone applications. The results of the self-efficiency scale showed a high degree in all fields and a very high degree in the special fields in solving unknown first-order equations and solving problems using first-order equations and also in the coordinate system. The results of the statistical analysis showed that there are no differences between the acceptance model and the self-efficacy due to gender variable, the years of teaching experience and the number of hours spent by the teacher on the social media. This is consistent with the study of (Uzunboylu, Genc, & Tugun, 2017) and (Ozdamli & Uzunboylu, 2015), it was noted that teachers have a very high percentage of the use of social networks over the Internet and the adoption of them in education in addition to the high desire to use e-learning in education. However, the results showed that there were differences between the acceptance model and the self-efficacy due to the variable type of phone and it was in favors of the smartphone.

4. Results of the question: Is there a relationship between self-efficacy and the acceptance of mobile techniques among North Cyprus mathematics teachers? There is a great relationship between self-efficacy and mobile technologies acceptance model. It's mean a great self-efficacy of the effectiveness of teachers in Northern Cyprus and their awareness of the use of mobile applications in educational programs, especially in mathematics.

6.1. Conclusion

In the study, the two questionnaires adopted by the researcher were studied from two studies. The primary objective of literary research is to analyze the theoretical background of acceptable models of technology acceptance, self-efficacy and relationship. Within the scope of this study, in order to propose a model with a background and a healthy theory, variables used, and a set of variables and variables associated with each other. If the researcher uses the same models, he can combine high reliability and reliability measures into their tools and develop a healthier and safer model of the model by developing its dimensions relatively. The study examined the relationship between mobile phone acceptance and self-efficacy, which showed a great relationship between the two scales.

Through the study, there are differences attributed to the type of mobile phone that has a role in accepting mobile phone application models. This is common in the model proposals, has had a significant impact on the acceptance of mobile phone applications. The explanation for this is that the world of smartphones and tablets has developed quickly recently, assisting teachers to use this improvement in the field of education, where knowledge has been growing recently, and this process is nearly linked to the development of technology and the use of the teacher and the selection of them in two things His life, the development of applications that serve education that has built a new concept of learning away traditional learning through the book to learning through smartphones and tablets.

Through the design of a special educational application, teachers can use any advanced techniques in giving knowledge in a modern way and using many advanced tools and mechanisms to support the presentation of his scientific material in a fun way by including some attractive image and video clips and sharing them with students. Explain the scientific material through video clips and put them on the students to watch them and take advantage of them for a longer time and achieve the

highest percentage of the student's collection of scientific material explained by the teacher and considered a reference back to the student at any time needed.

In addition, teachers can replace the student's e-book with the latest electronic data, write all the data related to all students, register their grades, communicate directly with students and parents at the same time, and send the exam results to them faster. It is important for teachers of mathematics to achieve the greatest benefit from the design of their own applications, where the application helps in the maintenance of many equations and complex mathematical laws and easily restored when needed again.

6.2. Recommendations

Consideration of the restrictions on this study is important, as it may be granted, assisted, or directed to others for future research. Constraints identified for the design of the study: The analytical descriptive design is applied to this study, as it has limitations on the context in which the study was conducted. Thus, the study lacks the power of conclusion or opinion or inference. Therefore, it can be said that the most important contribution of the study is to adopt a correct and reliable measure. An improved measurement tool can meet the measurement needs of researchers working on mobile applications. The results of the reliability analysis of each scale are included in the study. In addition, they can increase the reliability of the scales and can be relied upon in the design of these scales to identify students who have low-level perceptions of mathematics and computers at the primary level and to enhance their perceptions of their attitudes and performance that are believed to make a significant contribution to educational development and development.

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APPENDICES

Mobil Teknolojileri Kabul Modeli Ölçeği

Sayın Meslektaşım

Yakın Doğu Üniversitesi Eğitim Programları ve Öğretim Ana Bilim dalında doktora eğitimi yapmaktayım. Bu ölçme aracı, öğretmenlerin mobil teknolojileri kabul etme ve kullanma, karşılaştıkları zorluklar ve öğretimdeki kullanımlarını belirlemek için geliştirilmiştir. Katkınız, sorunlarınızı anlamak için değerli veriler sağlayacaktır. Cevaplarınız sadece bu çalışma için kullanılacaktır. Aşağıdaki iletişim bilgileri aracılığıyla herhangi bir sorunuz veya yorumunuz varsa lütfen bana ulaşın.

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Bölüm Bir: Genel ve Kişisel Bilgi:

Birinci Bölüm:

Lütfen sizin için uygun olan her bir ifadenin yanında bir 'X' işareti yerleştirerek doldurunuz.

1. Cinsiyet: erkek ☐ kadın ☐

2. Kaç yıldır öğretmenlik yapıyorsunuz? Lütfen yazınız.....

3. Kullandığınız telefon; Akıllı ☐ Normal ☐

4. Sosyal medya'yı bir günde ne kadar süre kullanıyorsunuz?

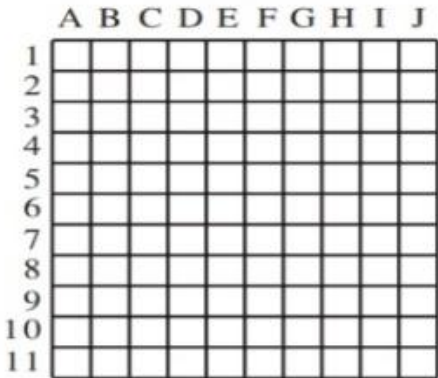
- a) Kullanmıyorum b) 1 saat den az c) 1 ile 2 saat arası
d) 3 saat ve üzeri

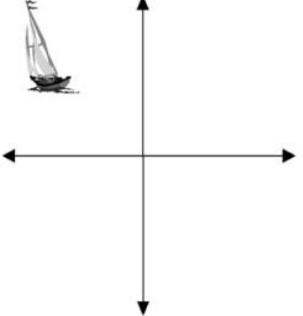
Numara	Eğitim alanı	Asla	bazen	Yarım zaman	sıkça	her zaman
	Gereksinimler:					
1.	Mobil uygulamaların sunduğu hizmetler ihtiyaçlarımı karşılar.					
2.	Mobil uygulamalar akıllı telefonla veya tabletle yapmak istediklerimle uyumludur.					
3.	Mobil uygulamalar işime yarıyor.					
4.	İhtiyacım olan hizmetler hakkında mobil uygulamaları indiriyorum.					
5.	Uygulama mağazasından (app store, google play store vb.) ihtiyaçlarıma yönelik uygulamaları indiriyorum.					
6.	Bazı mobil uygulamaları ihtiyaç duyduğum için daha sık kullanıyorum.					
7.	Telefonumda veya tabletimde mobil uygulamaları kullanmaya ihtiyaç duyuyorum.					
	Davranışsal Niyet:					
8.	İşlerimi geleneksel yöntemlerle halletmektense, mobil uygulamaları kullanmayı tercih ederim.					
9.	Gelecekte de mobil uygulamaları kullanmaya devam edeceğime inanıyorum.					
10.	Kesinlikle mobil uygulamaları kullanmaya devam edeceğim.					
11.	İşlerimi hallederken mobil uygulamaları kullanmaya niyetim var.					
12.	Mobil uygulamaları sıklıkla kullanmaya niyetim var.					
13.	Amacım, işlerimi hallederken geleneksel yöntemler yerine, mobil uygulamaları kullanmaktır.					
	Kullanımına Yönelik Tutum:					
14.	En çok kullanılan (moda) mobil uygulamaları kullanmak istiyorum.					
15.	Yeni mobil uygulamaları ilk deneyenlerden biriyimdir.					
16.	Yeni mobil uygulamaları ilk deneyenler arasında olmak isterim.					
17.	En yeni mobil uygulamaları denemeyi seviyorum.					
18.	Mobil cihazımın en yeni model olmasını isterim.					

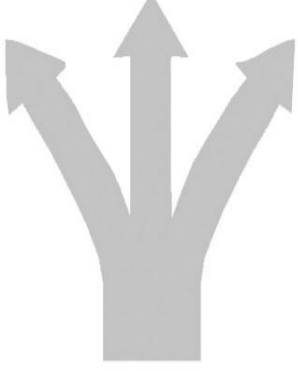
19.	Yeni teknolojileri ve cihazları ilk benimseyenler arasındayım.					
	Algılanan Yarar:					
20.	Mobil uygulamalar günlük işlerimi daha iyi yapmamı sağlar.					
21.	Mobil uygulamalar beni daha üretken yapar.					
22.	Mobil uygulamalar günlük işlerimle ilgili performansımı arttırabilir.					
23.	Mobil uygulamalar beni günlük işlerimde daha etkin kılar.					
24.	Mobil uygulamalar işlerimi yapmamı kolaylaştırır.					
	Öznel normlar :					
25.	Çevremdeki kişiler mobil uygulamaların faydalı olduğunu düşünüyor.					
26.	Çevremdeki kişiler mobil uygulama kullanmam gerektiğini düşünüyor.					
27.	Çevremdeki kişiler mobil uygulama kullanmamın iyi bir fikir olduğunu düşünüyor.					
28.	Çevremdeki kişiler beni mobil uygulama kullanmaya teşvik ediyor.					
29.	Mobil uygulama kullanmam konusunda çevremdekiler ısrarcı olabiliyor.					
	Performans Beklentisi:					
30.	Yapacak hiçbir şeyim olmadığı anda mobil uygulamalar kullanarak zamanın nasıl geçtiğini fark etmiyorum.					
31.	Mobil uygulamaları, istediğim yerde erişim sağlayabildiğim için, esnek buluyorum.					
32.	Mobil uygulamaları, istediğim zaman erişim sağlayabildiğim için, esnek buluyorum.					

MATEMATİĞE İLİŞKİN ÖZ-YETERLİK ALGISI ÖLÇEĞİ

Elinizdeki ölçek, yapılmakta olan bir araştırma için sizlerin matematiği günlük yaşamda kullanmada, matematik konularında ve matematik problemlerini çözmede kendinize ne kadar güvendiğinizi görmek amacıyla hazırlanmıştır. Lütfen her ifadeyi (örneği, konuyu, problemi) dikkatle okuduktan sonra size en uygun olan seçeneği işaretleyin.

1.	Bir alışveriş merkezinden alınan araç gereçlerin toplam fiyatımı hesaplama Kendime,	a. Her zaman güvenirim	b. Çoğunlukla güvenirim	c. Bazen güvenirim	d. Nadiren güvenirim	e. Hiç güvenirim
2.	Ev ile okul arasındaki uzaklık yaklaşık 20 km dir. Servis aracının hızı bilindiğinde, okuldan eve varma süresini hesaplama Kendime,	a. Her zaman güvenirim	b. Çoğunlukla güvenirim	c. Bazen güvenirim	d. Nadiren güvenirim	e. Hiç güvenirim
3.	808008 sayısının düz aynadaki görüntüsünü bulma Kendime,	a. Her zaman güvenirim	b. Çoğunlukla güvenirim	c. Bazen güvenirim	d. Nadiren güvenirim	e. Hiç güvenirim
4.	Yandaki şekil bir sinema salonundaki koltuk Düzenini göstermektedir. Buna göre; bilet üzerindeki koltuk numarasının yerini bulma					
	Kendime,	a. Her zaman güvenirim	b. Çoğunlukla güvenirim	c. Bazen güvenirim	d. Nadiren güvenirim	e. Hiç güvenirim

5.	Yandaki Koordinat düzleminde iki geminin ortak rotası verilmiştir. Her iki geminin de bulunduğu ve varacağı noktaların koordinatları verilirse, bu iki geminin karşılaşacakları noktanın koordinatlarını bulma  Kendime, a. Her zaman güvenirim b. Çoğunlukla güvenirim c. Bazen güvenirim d. Nadiren güvenirim e. Hiç güvenirim
6.	Birinci dereceden bir bilinmeyenli denklemleri çözebilme Kendime, a. Her zaman güvenirim b. Çoğunlukla güvenirim c. Bazen güvenirim d. Nadiren güvenirim e. Hiç güvenirim
7.	Birinci dereceden bir bilinmeyenli denklemleri kullanarak problem çözme. Kendime, a. Her zaman güvenirim b. Çoğunlukla güvenirim c. Bazen güvenirim d. Nadiren güvenirim e. Hiç güvenirim
8.	Simetri Kendime, a. Her zaman güvenirim b. Çoğunlukla güvenirim c. Bazen güvenirim d. Nadiren güvenirim e. Hiç güvenirim
9.	Koordinat sistemi Kendime, a. Her zaman güvenirim b. Çoğunlukla güvenirim c. Bazen güvenirim d. Nadiren güvenirim e. Hiç güvenirim
10.	Doğru Grafikleri Kendime, a. Her zaman güvenirim b. Çoğunlukla güvenirim c. Bazen güvenirim d. Nadiren güvenirim e. Hiç güvenirim
11.	Denkleminin çözüm kümesini bulabilirim. $\frac{2x + 1}{3} + \frac{x}{2} - 4$ a. Her zaman güvenirim b. Çoğunlukla güvenirim c. Bazen güvenirim d. Nadiren güvenirim e. Hiç güvenirim
12.	Bir anne 48, kızı ise 9 yaşındadır. Kaç yıl sonra annenin yaşı kızının yaşının 4 katı olur bulabilirim. a. Her zaman güvenirim b. Çoğunlukla güvenirim c. Bazen güvenirim d. Nadiren güvenirim e. Hiç güvenirim

13.	Yandaki şeklin simetri eksenini bulabilirim.  a. Her zaman güvenirim b. Çoğunlukla güvenirim c. Bazen güvenirim d. Nadiren güvenirim e. Hiç güvenirim
14.	Aşağıda verilen noktaları koordinat düzleminde gösterebilirim. A(1,3) B(4,-6) C(-1,5) D(-1,-3) a. Her zaman güvenirim b. Çoğunlukla güvenirim c. Bazen güvenirim d. Nadiren güvenirim e. Hiç güvenirim
15.	Aşağıda denklemleri verilen doğru çiftinin grafiklerini aynı koordinat düzleminde çizip, kesişim noktasını bulabilirim. $x - 3y = 7$ $2x + 5y = 3$ a. Her zaman güvenirim b. Çoğunlukla güvenirim c. Bazen güvenirim d. Nadiren güvenirim e. Hiç güvenirim

Annex (3)

26.02.2019

Dear Hatem A.M.Darabee

Your application titled “**Determining the relationship between teachers’ self-efficacy perception and Mobile technologies acceptance model**” with the application number YDÜ/EB/2018/214 has been evaluated by the Scientific Research Ethics Committee and granted approval. You can start your research on the condition that you will abide by the information provided in your application form.

Assoc. Prof. Dr. Direnç Kanol

Rapporteur of the Scientific Research Ethics Committee



Note: If you need to provide an official letter to an institution with the signature of the Head of NEU Scientific Research Ethics Committee, please apply to the secretariat of the ethics committee by showing this document.

Annex (4)



KUZEY KIBRIS TÜRK CUMHURİYETİ
MİLLÎ EĞİTİM VE KÜLTÜR BAKANLIĞI
İLKÖĞRETİM DAİRESİ MÜDÜRLÜĞÜ

Sayı : İÖD.0.00-006-19-E.1692

21 Mart 2019

Konu : Anket çalışma izni hk.

Sayın Hatem A.M. DARABEE,

Müdürlüğümüze bağlı okullarda uygulamak istediğiniz "*Mobil Teknolojileri Kabul ve Matematik Algısı*" konulu çalışması, Talim ve Terbiye Dairesi Müdürlüğü tarafından incelenmiş yapılan inceleme sonucunda çalışmanın; araştırma etiği ilkeleri, katılımcıların gizlilik ve gönüllülük esaslarına bağlı olarak gerçekleştirilmesi gerekmektedir. Ancak "Matematiğe İlişkin Öz Yeterlilik-Algısı Ölçeği" konulu çalışmada katılımcıların gizlilik esasına bağlı kalmadığı tespit edilmiş olup, gerekli düzenlemeler yapıldıktan sonra tekrar başvurunun yapılması uygun görülmüştür.

Bilgilerinize saygı ile rica ederim.

e-imza'dır

İlksen VAROĞLU ATİK
Müdür

Not: 93/2007 sayılı Elektronik İmza Yasası'nın 6.maddesi gereği bu belge elektronik imza ile imzalanmıştır.

Evrak Değerlendirme Kodu : DNTOCMXQ8CGQMTAD7VCL Evrak Takip Adresi : <http://dagrnlrm-dhs.gov.tr>
Şhi. Mehmet Hasan Tuna Sokak, No.5 Yenışehir 99010 LFKOŞA
Tel: 2286893
Faks: 2287158

Bilgi için:Funda BİSTAN
Sekreter

Annex (4)



KUZEY KIBRIS TÜRK CUMHURİYETİ
MİLLİ EĞİTİM VE KÜLTÜR BAKANLIĞI
GENEL ORTAĞRETİM DAİRESİ MÜDÜRLÜĞÜ

Sayı : GOÖ.0.00-174/06-19-E.1756

7 Mart 2019

Konu : Hatem A.M.Darabee'nin Anket Başvuru
Formu

Sayın Hatem A.m. DARABEE

İlgi : 6 Mart 2019 tarihli ve GOÖ.0.00-174/06-19-E.1675 sayılı yazı.

Sayın Hatem A.M. Darabee tarafından gerçekleştirilecek "Mobil Teknolojileri Kabul Modeli Ölçeği" ile "Matematiğe İlişkin Öz Yeterlilik Algısı" konulu çalışma ile ilgili anket soruları incelenmiştir. Yapılan inceleme sonucunda;

- Tüm bireyi tanıma teknikleri gizlilik ve gönüllülük ilkelerine dayalı olarak yapılmalı ve çalışmaya katılan tüm katılımcıların kimlik bilgileri gizli tutulmalıdır.
- Araştırma sonuçlarına ilişkin geri bildirimler öğrencilerin ve öğrenci velilerinin etkilenmesine karşılık gelmeyecek şekilde iletilmelidir.

Gerçekleştirilecek çalışma, uygulanacak okulların Müdürlüğü'ne ile istişarede bulunulup, çalışmanın hangi okulda ne zaman uygulanabileceğinin birlikte saptanması ve yukarıda belirtilen hususların yerine getirilmesi koşulu ile uygun görülmüştür. Çalışma uygulandıktan sonra sonuçlarının Talim ve Terbiye Dairesi Müdürlüğü'ne ulaştırılması yasa gereğidir.

Bilgilerinize saygı ile rica ederim.



e-imza ile
Nihal YALYALI
Müdür Muavini

Sayı: 31/2007 sayılı Elektronik İmza Yasa'sı ile Anadolu'da güvenli bir belge elektronik imza ile sözlüden geçerli.

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