

**TRNC  
NEAR EAST UNIVERSITY  
GRADUATE SCHOOL OF EDUCATIONAL SCIENCES  
INNOVATION AND ENTREPRENEURSHIP IN EDUCATION**

**ASSESSMENT OF TEACHER AND STAKEHOLDER VIEWS OF  
EDUCATIONAL TECHNOLOGIES IN TERMS OF ENTREPRENEURSHIP  
AND INNOVATION UNDER COVID-19 PANDEMIC CONDITIONS**

**MASTER THESIS**

**NAZIFE KAYALAR**

**Nicosia,  
November, 2020**

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**Assoc. Dr. Behcet ÖZNACAR**

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November, 2020**

## Approval

We certify that we have read the thesis submitted by Nazife KAYALAR titled **“Assessment of Teacher and Stakeholder Views of Educational Technologies in Terms of Entrepreneurship and Innovation Under Covid-19 Pandemic Conditions”** and that in our combined opinion it is fully adequate, in scope and in quality, as a thesis for the degree of Master of Graduate School of Educational Sciences Innovation and Entrepreneurship in Education.

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## **Declaration**

I hereby declare that all information, documents, analysis and results in this thesis have been collected and presented according to the academic rules and ethical guidelines of Graduate School of Educational Sciences, Near East University. I also declare that as required by these rules and conduct, I have fully cited and referenced information and data that are not original to this study.

Nazife Kayalar

...../...../2020

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## **Abstract**

### **Assessment of Teacher and Stakeholder Views of Educational Technologies in Terms of Entrepreneurship and Innovation Under Covid-19 Pandemic Conditions**

**Kayalar, Nazife**

**Master Innovation and Entrepreneurship in Education Branch of Science**

**Supervisor: Assoc. Dr. Behcet ÖZNACAR**

**November 2020, 100 Page**

In this thesis study titled evaluation of teacher and stakeholder views of educational technologies in terms of entrepreneurship and innovation in the pandemic process, a research was conducted on the education system in the Turkish Republic of Northern Cyprus and the online learning (smart learning) that has been introduced to the new system due to the pandemic that has affected the whole world. Education (online) has been implemented and our students and teachers have taught the lessons over the internet. During this period, a new system has been applied to ensure that students who have combined technology and education do not miss the lessons. Qualitative research was carried out in this study, 75 participants participated in the research of the researcher and answered these questions. Teachers, school administrators and stakeholders (education programmer, internet provider, technological equipment vendor) participated in the survey. At the end of this study, there were some problems in the smart learning (online learning) system. The lack of internet infrastructure, the inability of some students to provide technological equipment, and the inability of the students to concentrate due to the fact that the lessons are conducted over the internet.

**Keywords;** education, technology, pandemic, student, teacher

## Öz

### **Covid-19 Pandemi Koşullarında Eğitim Teknolojilerine İlişkin Öğretmen ve Paydaş Görüşlerinin Girişimcilik ve Yenilik Açısından Değerlendirilmesi**

**Kayalar, Nazife**

**Yüksek Lisans Eğitimde Yenilikçilik ve Girişimcilik Bilim Dalı**

**Danışman: Doç. Dr. Behçet Öznacar**

**Kasım 2020, 100 Sayfa**

Girişimcilik açısından eğitim teknolojilerinin öğretmen ve paydaş görüşlerinin değerlendirilmesi ve pandemik sürecinde yenilik isimli bu tez çalışmasında Kuzey Kıbrıs Türk Cumhuriyetindeki eğitim sistemi ve bütün dünyayı etkisi altına alan pandemi nedeniyle yeni sisteme geçilen uzaktan eğitim (online) hakkında bir araştırma yapılmıştır. Bilindiği üzere ülkemizde bir süre uzaktan eğitim (online) hayata geçmiş ve öğrenciler ve öğretmenlerimiz dersleri internet üzerinden yapmışlardır. Bu süre zarfında teknoloji ve eğitim kombin edilmiş öğrencilerin derslerden geri kalmaması için yeni bir sistem uygulanmıştır. Bu çalışmada nitel araştırma yapılmıştır, 75 katılımcı araştırmacının araştırmasına katılarak sorulan sorulara cevap vermişlerdir. Bu ankete öğretmen, okul yönetici ve paydaşlar (eğitim programcısı, internet sağlayıcısı, teknolojik ekipman satıcısı) katılmıştır. Bu araştırmanın sonunda uzaktan eğitim sisteminde bazı aksaklıklar yaşanmıştır problemlerden bazıları; internet altyapısını kötü olması, bazı öğrencilerin teknolojik ekipman sağlayamaması, derslerin internet üzerinden yapılmasından dolayı öğrencilerin konsantre olamaması. Buna karşılık olarak bazı katılımcılarımız ise uzaktan eğitim ve okullarda akıllı tahta kullanımından dolayı öğrencilerin başarılarının arttığını ve geleneksel eğitim ile karşılaştırıldığında daha verimli eğitim verildiğini dile getirdi.

**Anahtar Kelimeler:** eğitim, teknoloji, pandemic, öğrenci, öğretmen, okul, akıllı tahta

## Contents

Approval.....	1
Declaration .....	2
Abstract .....	4
ÖZ .....	5
Contents .....	6
List of Table .....	8
List of Figures .....	9

### CHAPTER I

Introduction.....	11
Aim of The Research .....	12
Importance of The Research .....	12
Problem .....	13

### CHAPTER II

Literature Review.....	14
Entrepreneurship .....	18
Innovation .....	19
Entrepreneurship and Innovation .....	21
Education and Employment .....	23
Entrepreneurship and Innovation in Communication .....	26
Social Media As Advertising Tool.....	27
Online Shopping and Covid-19.....	29

### CHAPTER III

Method .....	35
--------------	----

### CHAPTER IV

Findings.....	47
---------------	----



**CHAPTER V**

Discussion .....	84
------------------	----

**CHAPTER VI**

Conclusion and Recommendations .....	89
--------------------------------------	----

Conclusion .....	89
------------------	----

Recommendations .....	89
-----------------------	----

<b>REFERENCES.....</b>	<b>91</b>
------------------------	-----------

<b>ANNEXES.....</b>	<b>96</b>
---------------------	-----------

Appendix 1 .....	96
------------------	----

Appendix 2.....	98
-----------------	----

Turnitin Report.....	99
----------------------	----

### List of Table

Table 1: Advantages of the Educational Technologies.....	40
Table 2: Disadvantages Of The Educational Technologies .....	42
Table 3: Views On Educational Technologies Compare Success Rates In Education With Regard To Smart Board,Smart Learning Or Traditional Teaching Model .....	44
Table 4: Expectations For Entrepreneurship In Education By The Ministry Of Education And Stakeholders.....	46
Table 5: Expectations For Innovation In Education By The Stakeholders And The Ministry Of Education .....	48
Table 6: Educational Technologies You Use In Online Learning With The Pandemic Process .....	50
Table 7: Advantages Of Smart Learning , Which Is Developed With Innovation In Education, Affect The Success Of The Student.....	52
Table 8: Disadvantages Of Smart Learning , Which Is Developed With Innovation In Education, Affect The Success Of Student .....	54
Table 9: Opinions About The Adaptation Of Students If Educational Technology Is Used In Schools .....	56
Table 10: Thoughts About The Concept Of Entrepreneurship .....	58
Table 11: Thoughts About The Concept Of Innovation .....	60
Table 12: Thoughts About The Education System In The TRNC .....	62
Table 13: Interested with technology and ideas .....	64
Table 14: Developing Yourself About Technology.....	65
Table 15. Word frequency analysis data .....	67

## List of Figures

Figure 1. Gender of participants.....	13
Figure 2. Number of participants .....	14
Figure 3. Age of participants.....	14
Figure 4. Education of participants .....	15
Figure 5. Experience of participants .....	15
Figure 6. Experience of participants .....	16
Figure 7. Experience of participants.....	16
Figure 8. Number of Apple Iphone devices in U.S. , China and the rest of the World in 2017 .....	31
Figure 9. Digital Around in the World in 2020.....	31
Figure 10. The Theme and Sub-Themes Regarding the Research Model Revealed as a Result of Data Analysis in Qualitative Research.....	38
Figure 11. Theme and Sub-Themes Distribution Map (Maps Project) Nvivo 12 Plus Data of advantages of educational technologies.....	39
Figure 12. Theme and Sub-Themes Distribution Map (Maps Project) Nvivo 12 Plus Data of disadvantages of educational technologies.....	41
Figure 13: Theme and Sub-Themes Distribution Map (Maps Project) Nvivo 12 Plus .....	43
Figure 14: Theme and Sub-Themes Distribution Map (Maps Project) Nvivo 12 <i>expectations for entrepreneurship in education by the Ministry of Education and Stakeholders</i> .....	45
Figure 15: Theme and Sub-Themes Distribution Map (Maps Project) Nvivo 12 <i>expectations for innvation in education by the Ministry of Education and Stakeholders</i> .....	47
Figure 16. Theme and Sub-Themes Distribution Map (Maps Project) Nvivo 12 <i>educational technologies you use in online learning with the pandemic process</i> .....	49

Figure 17: Theme and Sub-Themes Distribution Map (Maps Project) Nvivo 12 <i>advantages of online learning , which is developed with innovation in education, affect the success of the student</i> .....	51
Figure 18: Theme and Sub-Themes Distribution Map (Maps Project) Nvivo 12 <i>disadvantages of smart learning, which is developed with innovation in education, affect the success of student</i> .....	53
Figure 19: Theme and Sub-Themes Distribution Map (Maps Project) Nvivo 12 <i>opinions about the adaptation of students if educational technology is used in schools</i> .....	55
Figure 20: Theme and Sub-Themes Distribution Map (Maps Project) Nvivo 12 <i>thoughts about the concept of entrepreneurship</i> .....	57
Figure 21: Theme and Sub-Themes Distribution Map (Maps Project) Nvivo 12 thoughts about the concept of innovation.....	60
Figure 22: <i>Theme and Sub-Themes Distribution Map (Maps Project) Nvivo 12</i> <i>thoughts about the education system in the TRNC</i> .....	61
Figure 23: Theme and Sub-Themes Distribution Map (Maps Project) Nvivo 12 Interested with technology and ideas.....	63
Figure 24: Theme and Sub-Themes Distribution Map (Maps Project) Nvivo 12 <i>developing yourself about technology</i> .....	65

## CHAPTER I

### Introduction

Firstly; last decade technology and education intertwined, this means technology is improving day to day and this brings innovation to the education. In addition to this, education sector is improved by technology; for example; smart education or online education is the part of this new technology. With using technology in education strive to reduce local education gaps and support the nurturing of creative talents by providing a smart educational environment driven by the last IT technology. In this thesis will be include, innovation and entrepreneurship in education system, smart boards and communication. Technology and education are combined, the quality of education will be increased, and this means; teachers and students can get high quality education. In addition to this, this will be affect education in a positive way. Also thesis research method will be used qualitative research method. The researcher will be asked question to participants. Participants will be teachers, school administrators and stakeholders (education software, who sells IT equipment). The numbers of participants are 25 (Gündüz & Kutluca, 2019).

Smart boards are a new concept that has developed in the world of education technology in the last year, and it is one of the crop solutions in reaching smart learning (online learning) or remote information. Some educational institutions pay attention to continue their education with smart boards equipped with a computer system in order to follow all the developments in the world, as well as the developing technology, to provide more traceable and practical education. Smart boards, which are widely used in Europe and America, are easy to install and use, they are educational tools that enable teachers and students to evaluate the time of the teacher and student who play an even more active role in use with the projector, and create the flow of information. Today's students grow up in a world that is rapidly developing, where communication is fast, innovations are emerging and disappearing with more advanced technologies at the same speed, and many things can be controlled remotely. It is important. In this research will get ideas from students and teachers if technology`s role will be bigger in education, will rate of success increase? In this research, students and teachers are significant because they will be using this technology in their education life.

In present time, technology is important for education also many more sector such as; tourism, aviation, food and health because technology makes human life easier. People can take appointment online from hospital; people can buy their tickets via online. In addition to this, people can make announcement by social media in a short time, for example, most of the people invite their family, friend to their events from Facebook and they can reach to big communities in a short time. So with this innovation make human life easier and they can make many more things with using latest technology. Moreover, technology is improving day to day so humanity wants more. For example, with technology students can revise their lessons as much as they want, moreover they do not miss any session because they can catch it from online or board , this means teacher upload lesson online. In addition to this, if smart board using will spread out, teachers can support their lessons with photos, videos 3D or 4K images. Also they have an chance to create laboratory in classes.

### **Aim of The Research**

The aim of the research is to examine the capacity of schools in digital transformation in terms of technological use and infrastructure in TRNC how run schools with technological equipment's, if they will use technology in education system, will it be successful? in TRNC. In addition to this, in Cyprus do they make innovation in education system and are they brave in education sector to use new technology in education such as smart boards, online education, different software using, tablets etc.

### **Importance of The Research**

The importance of this thesis is to search education system in Cyprus and drawing attention about mistakes and missing in system also make better education system, become efficient and increase success rate in education in TRNC. The reason for this research is to draw attention to the problems related to the education system in our country and to provide the necessary infrastructure. In addition to this, get the opinion of trainers and stakeholders about problems in education.

## **Problem**

This thesis is writing about technological education however; in TRNC majority of public schools do not have even internet connection but this age is technology age so every public and private schools have to have technological equipment's so in this thesis will point out these problems, moreover the researches will interview school managers, teachers and stakeholders. So in interview some of the participants do not want to participate to interview, give wrong information and may they do not have information about technology so researcher can face with these limitations and problems.

## **CHAPTER II**

### **Literature Review**

In this part of the thesis will be included similar topics with innovation and entrepreneurship in education also will be explained content, participants and the way of research method.

Firstly, this thesis will include different parts of technology and its effects to few sectors. The majority will be about education. Let's look at the education; Education; through schools, courses and universities, the knowledge and skills required in life can be systematically produced to individuals. Education is a concept that is difficult to define because it is a phenomenon that continues from birth to death and it involves political, social, and cultural and individual at the same time. Nowadays due to pandemic education will turn to technological system. Most of the country will do online education to reduce risk of coronavirus.

The journal of The Effect of Designing Innovative Material on the Elementary School Pre-service Teacher's Innovativeness is the aim to find the study, having been carried out to determine the effects of designing innovative material on the elementary school prospective teachers' innovativeness and present their perceptions on innovativeness after the process of designing innovative material, was designed as a case study. Research group consisted of 27 third grade prospective teachers educated at Elementary School Teaching Program at Mersin University during 2013-2014 academic year. Individual innovativeness scale and innovativeness perception questionnaire were applied to the prospective teachers before and after the process of designing innovative materials. Moreover, they were desired to keep diaries about the design of innovative materials. Content analysis was done via Nvivo 8 program for the analysis of qualitative data. Quantitative data was analysed through such techniques as descriptive statistics, t-test for dependent and independent samples. As a result of the study, an increase in the innovativeness level of the elementary school prospective teachers designing innovative materials was deduced. Furthermore, it was observed that the prospective teachers' perceptions on innovativeness in education, the properties of innovative teacher, innovative material design existed. Moreover, the prospective teachers' positive views on design of



innovative materials were among the results of the study. (Yavuz K., Yokuş and Yanpar Y., 2016). On the other hand, they have tried to find answers to these questions;

After the process of designing innovative material for 1st grade teacher candidates

What are their perceptions of innovation levels?

1.1. Before and after classroom teacher candidates design innovative materials

Do the innovation levels show a statistically significant difference?

1.2. After elementary teacher candidates' innovative material design process

Do the levels of innovation differ significantly by gender?

2. Class teacher before and after the innovative material design process

What are the candidates' perceptions of the concept of innovation?

In addition to this they have found that, the innovation scale was statistically significant between pre-test and post-test measurements. Classroom teacher of developing innovative material with the group based on detection of difference it can be judged that the candidates increase their level of innovation. Innovative material that the pre-service teacher candidates learned the concept of innovation after the preparation process, consider the principles of material development while designing innovative materials, assessing that they made a business plan and that the group members complied with this plan, that they bring innovation to materials, have difficulties in generating ideas, but never that they did not give up, they were able to reveal innovative material (product) by evaluating all opportunities, that they can design innovative materials using the resources they have, innovative designing materials gives them a different perspective and are very happy with it enjoy designing materials that bring innovation apart from existing materials what they take, that working with group members makes their job easier and they take

responsibility, endeavour beyond their power to design innovative material, It was observed that they focused on and produced innovation.

In Turkey most of the public and private schools are using smart boards and these are the most important equipment in education. Firstly with improvement of technology, online education and smart boards using rate has increased. For example; Journal of views of Primary School Teachers about Smart Board a sample from Ağrı Smart boards are the important material of today's educational technologies. With the recognition of the contribution of smart boards to education, its usage has started to increase in our country as well. The numbers of the studies about the education technologies are also increased. In the related literature, there are studies about the use of smart boards in the lessons but there are few researches that reflect the opinions and experiences of primary school teachers about smart boards. The aim of this study is to examine the views of primary school teacher about smart board usage. Descriptive method was preferred in the study and a questionnaire including open-ended questions was used. The study included 30 voluntary primary school teachers from Doğubeyazıt, Ağrı. The data obtained from the responses of the teachers to the questions grouped based on their common points; the frequencies and percentages of these responses calculated. The findings of the study showed that the smart board is a useful technological material; it facilitates students' learning and positively affects the students' attitudes to the subject. It activates the students and attracts the attention of them. It is also seen that teachers' knowledge about effective use of smart board is limited. They use the smart board as a projector. It is suggested that teachers should be given an in-service training course to teach different methods to use smart board.

TABLE 2: the findings related to teachers' reasons for using the smart board (Adagideli & Cerrah Ozsevgec, 2019) claims that, the findings of this research showed that, teachers said that %96.6 smart boards are facilitates teaching .On the other hand, again with %96.6 smart boards are increasing my productivity in teaching. In addition to this, %90 increases classroom performance while explaining lesson. The teacher said that, with %90 "I think that the smart board can be used as multifaceted." %76.6 it increases efficiency in teacher's performance and profession. Lastly, %30 teachers said that, "The people I am influenced in my profession believe the necessity of using a smart board."

In journal of The Using of Active Board at Secondary School Geography Lessons showed that, smart boards using in classes promise a successful future. In today's age of information or age of technology, technology shows fast advancements and is effective in every field of life. These technological advancements are also impressively effective in education field. In creation of an active learning environments called smart classrooms having internet, computers, projectors, interactive whiteboards in its structure, promises many further developments for Geography education. In recent years, these smart classroom applications are increasing day by day. These advancements are generally led by private schools, which have more facilities and infrastructure funding. This study aims to clarify the effects of using interactive whiteboards in geography education. Doga College is chosen as sample universe, which employs interactive whiteboards since 2007 in all its classrooms. This study is made within 7 high schools of Doga College in Istanbul with 16 geography teachers and 148 students taking geography course. According to the results of questionnaires applied to the sample target population, the effects of using interactive whiteboards in geography education are assessed.

**Data Collection Tool:** In this study, the use of smart board's teachers and teachers to investigate their effects in secondary school geography. It was prepared to determine the opinions of the students. The data of the research are two different questionnaires prepared by the researcher. It was obtained through. The following operations during the preparation of the questionnaires, it is made.

1. First of all, 20 questions aimed at determining teachers' opinions a questionnaire has been prepared.

2. In line with expert opinions, teachers' qualifications .Teachers' age, experience and an introduction with 6 questions such as smart board usage times It was added.

3. Considering the opinions of the head of the district and the teacher a second 20-question survey to measure students' attitudes. It was formed.

4. Then the teacher questionnaire was carried out by 16 teachers and the student questionnaire. It was applied on a total of 148 students.

5. A five-point scale in answering the questionnaire items has been used;

(1) Strongly disagree (2) Disagree

(3) No idea (4) I agree

(5) I strongly agree

At the end of the research most of the teachers and students claims that, smart board using has increased productivity, creativity and raised level of success.

### **Entrepreneurship**

In recent times; most of the countries started to give an entrepreneurship and innovation subject in their education system. This means, around the world, such as; in Europe, America involved entrepreneurship and innovation in their education. On the other hand, in Cyprus, Near East University is the one of the example which is they have included entrepreneurship and innovation topic in education.

Nowadays, Entrepreneurship has significant role over the economy; entrepreneurship is the best way to employment. In recent times; entrepreneurship is one of the engines that drive a dynamic and innovative economy. It is widely accepted that entrepreneurship contributes to the positive development of different economic indicators. The European Commission defines entrepreneurship as a dynamic process where individuals constantly identify economic opportunities and develop, produce and sell goods and services (European Commission, 1998). Grilo and Thurik (2005) see entrepreneurship at the center of innovation, productivity growth, competitiveness, economic growth and job creation. According to Shane (2003), entrepreneurship is an activity that involves discovering, evaluating and using opportunities to present new products and services, organizing ways to organize, markets, processes and raw materials in a non-existent way. At the same time, entrepreneurship is an activity that includes creativity, innovation, risk taking and the ability to plan and manage projects to achieve goals (Commission of the

European Communities, 2006). Entrepreneurs always develop new products or open new markets and thus contribute to the innovative capacity of the economy and also encourage existing businesses to operate more efficiently (EIM Business & Policy Research, 2002: 5). This initiative has a very positive effect on productivity, growth and economy on all sectors of the entrepreneurial economy. Entrepreneurs are the engines of economic growth. It develops the latest technologies, creates new jobs, increases competition, and strengthens human capital and social capital. Also, Van Praag and Versloot are attributed, 2007). Ortega-Argile's and Voigt (2009) states that, SMEs and entrepreneurship continue to be an important resource for improved dynamism, innovation and flexibility. You can evaluate it by presenting new products, developing new business models and opening new markets (World Bank, 2015). Entrepreneurs are looking for an innovation that cannot be easily imitated on the rapidly changing customer demand and the product or service they offer to ensure that they respond. Entrepreneurs desire to innovate in their business processes for a wide variety of purposes, as innovations in products or services will enable their customers to work faster, increase efficiency and quality. As can be seen from here, entrepreneurship and innovation become two important concepts identified with each other. The social welfare and living standard of the community is surrounded by an increased use, increased per capita national income, effective use of resources, and some examples of what entrepreneurship brings to society through innovation.

At the present time; technology and entrepreneurship is inseparable because technology is part of the entrepreneurship. Because most of the sector is using latest technology especially in social media is the biggest part of the entrepreneurship.

Social Media is essential for entrepreneurs, they cannot be apart from social media, it is the most effective tool against to their audience.

### **Innovation**

Innovation is an important process that needs to be understood precisely and often confused with the invention due to its great benefits. The invention is a new idea and is an outcome that sometimes occurs by chance, as a result of the inventor's desire to do a job faster, higher quality or more efficiently to meet certain needs. Innovation is the commercial implementation and successful use of this idea (Info

Entrepreneurs, 2017). The role of entrepreneurs (commercializing the idea) is therefore sharply different from the role of inventors (Braunerhjelm, 2010: 2). Innovation is the creative use of existing things or the creation of new and different things (ITC, 2009). Improving or changing business processes to increase efficiency and productivity, or expanding the scope or quality of existing products and / or services of the business, developing completely new and improved products and services, and adding value to existing products, services or markets to distinguish the business from its competitors are expected benefits. . Innovation can take the form of a single major breakthrough, as well as a small, incremental series of changes (Info Entrepreneurs, 2017). Innovation is the transformation of new information into new products and services, and the innovation process is defined as follows (Grünfeld et al., 2011: 16). 1. Invention - creating and conceptualizing the idea 2. Prototype - Development of the idea 3. (Commercial) use - the commercialization of new products / services or the use of other innovations 4. Expansion - The process of transferring innovation to new markets or the process of implementing innovation throughout the organization. The only way for small firms to enter or survive there is to be innovative (UNECE, 2012). Although the names of many large companies are often associated with new products and processes, research has been integrated into other products by small and medium-sized companies (SMEs), often in large industries, such as production based on information and communication technologies, automobile or pharmaceutical production, or on their own. shows that they have new ideas that are put on the market. (OECD, 2010b). Innovation is a factor that enables firms to specialize, achieve international best practice standards and improve quality. Each of these areas is required for companies to compete and develop in the global economy (World Bank, 2015). OECD (2007a) emphasizes that innovative performance is a crucial factor in determining competitiveness and national progress today, and most of the increase in living standards is due to innovation. The intensifying global competition and rapidly changing market conditions increase the uncertainty of a wide variety of traditional business parameters, and innovation is thus becoming a decisive factor for existing firms to gain competitive advantages (Tidd et al., 2005: 10). Growth and job creation effects are also thanks to innovation; new company formations and growth of SMEs increase efficiency and new or underused resources come into play in this way (OECD 2010a). Today, innovation is known as the engine of growth and an

important element of their success in development (Zsuzsanna & Herman, 2012: 268). Innovative entrepreneurship integrated with entrepreneurship has started to be seen as the main element of modern economic development (UNECE, 2012). According to the OECD, most of the net employment is generated by new ventures and there is a close relationship between the growth of businesses and innovation activities (OECD, 2010c). All countries, especially developed countries, continue to develop strategies and policies to improve their entrepreneurship and innovation capacities (Casız, 2014: 8).

### **Entrepreneurship and Innovation**

Some research distinguishes between "innovative" and "ordinary" entrepreneurship, underlining that these two types of entrepreneurship can result in different economic outcomes (Waasdorp, 2002: 32; Dahlstrand & Stevenson, 2010: 7). The main contribution of ordinary entrepreneurship is creating temporary / permanent jobs. Innovative entrepreneurship enables higher value added employment and wealth creation and firms to have higher growth rates (Stevenson, 2002: 60). In addition, innovative entrepreneurship can be a major driver of economic growth through the development of new business models, the application of new technologies and the creation of new jobs (Hendrickson et al., 2015: 19 and OECD, 2015). Entrepreneurship is one of the foundations of innovation (OECD, 2010a). Whether it is entirely technological or involves a change in the way an industry is organized, every innovation requires an entrepreneurial initiative in the initial process (Baumol, 1968: 66). According to the OSLO Guide (2005), innovation is "applying a new or significantly improved product or service or process, a new marketing method, or a new organization method in business practices, business organization or foreign affairs". On the other hand, entrepreneurs are people who try to generate value by creating or expanding economic activity by identifying and benefiting from new products, processes or markets (OECD, 2007b). Innovative entrepreneurship leads to identifying, developing, successfully commercializing market opportunities and successful adoption of new products and services in the market. The innovative entrepreneur is a central figure in the innovation process. It is the main driving force in the complex process that turns a theoretical idea into a commercially viable product or service. However, in the commercialization of an

innovation, production, finance, management, etc. It can be extremely difficult and difficult for new creative entrepreneurs as there are additional obstacles in the fields.

According to the Global Entrepreneurship Monitor, entrepreneurs make up two thirds of innovations (Global Entrepreneurship Monitor, 1999), entrepreneurs act as change agents and turn new inventions and inventions into new products and services. Entrepreneurs look for new possibilities and establish new combinations, and entrepreneurs become drivers of change (EIM Business & Policy Research, 2002). Being able to achieve innovative entrepreneurial market share and high profit margin enters the market with an innovation. An innovative entrepreneur can have a significant share in the market in this way. The market share and profitability of the company increases until its competitors catch this innovation and emulate it in the market and emulate it. Audretsch and Thurik (2001) and Acs et al. According to (2009), most of the entrepreneurial activity involves innovation and entrepreneurs are critical in the innovation process, and entrepreneurial capacity is an important factor in the transfer of information in the commercialization process. According to Drucker (1985), "every new small business is not entrepreneurship or represents entrepreneurship" and some "entrepreneurs" innovate by commercializing new products or services or by using new techniques to produce or deliver existing products and services. Other "cheating" entrepreneurs produce or sell goods and services currently on the market in different places (Drucker, 1985: 21). When the numbers are compared, it is seen that the copy entrepreneurs have a great weight in the market. Since entrepreneurship is not insignificant due to the fact that establishing and maintaining a business with copying method, which makes most people out of poverty and even turns into a lucrative life, innovative entrepreneurship that creates useful externalities to the economy as a whole due to the new products, services and techniques they offer to the market. (Baumol et al., 2011: 4) emerges as an area that needs more attention by policy makers. Public policy plays an important role in creating a favorable environment for sustainable economic growth and the development of innovations for the welfare of society. Therefore, it is necessary to strengthen the initiatives of the public sector in the field of innovative entrepreneurship (Balkienė and Jagminas, 2010: 33). As a result, innovations often come from innovative entrepreneurs. More entrepreneurs need to innovate for more economic development, employment growth and sustainable competitive advantage.



This can only be achieved by providing the entrepreneurs with the necessary environment and creating the ecosystem, that is, by creating policies that support innovative entrepreneurship. The legal and regulatory environment, prototype production infrastructure that is important in the commercialization of the idea, access to financial resources, commercial and innovation culture, joint project development, business networks, competent experts / mentors and human resource quality are essential factors for the innovative entrepreneurship ecosystem, and these factors in this study. Turkey forms a specific proposal has been presented as a model.

### **Education and Employment**

Technological changes affect and shape working life. With the introduction of information and technology in every field, structural transformations have started to be seen in the field of employment. The share of the service and information sector in employment in developed countries has started to increase gradually. The contribution of education to economic developments, which has an important role in bringing knowledge and skills to the workforce, is also extremely important. Together with the information society, the globalization of the workforce as well as the capital can be mentioned. Pamukkale University Journal of Education Year: 2001 Issue: 9 68. As a natural consequence of this, it can be said that education and human resources management will have a very important place in the future. It can be expected that the demand for providing the necessary training to the workforce will increase during the education process (İçli, 2001).

Especially in developing countries, adapting to technological developments is more difficult than in developed countries. Lack of sufficient infrastructure and qualified workforce causes intense use of cheap labour in developing countries. On the other hand, the need for qualified workforce is increasing in order to use advanced technology. Adaptation of the workforce to new employment area. It would be beneficial to consider the policies to be developed together with education policies in terms of providing

Firstly, most of the European countries use latest technology in education system. Last 10 years, schools have started to use smart boards in classes. With these smart boards, creativity, level of success and improve increased. With improvement

of the technology, innovation and entrepreneurship being popular, because entrepreneurship and innovation cannot be separate so smart boards are improving with technology. These smart boards are innovation in this age; people start to learn technology in a small age, so education system should apply latest technology in their education system. Students have to take needed education.

Changes in the twenty-first century naturally change the competencies expected from individuals. Therefore, all social, especially the education system brings important tasks to the systems. In parallel with this; redesigning the education system in order to raise individuals in accordance with this age, making it suitable becomes indispensable. (Ozmusul,2012) In order for individuals to acquire the necessary skills in accordance with the age we live in, one of the main objectives of the education system should be to create a creative and innovative understanding in students. In the formation of this understanding, the beginning of the education-teaching process teachers with an actor must have a weighted role. Therefore, the importance of creativity and innovation concepts in the education and training of teachers increasing.

In present era, with the development of technology, there are changes in the education system. For example smart boards, computers software also students have started to use tablets or laptops to reach their notes and homework's. In North Cyprus most of the private schools use this system. They start to use from primary school. In addition to this, students submit their works, essays or presentation with online. The biggest reason for this, today most of the children are using smartphones, tablets and playing online games on computers. It can be said that, children of this age born into technology. They start to use technology from small age.

Under this circumstance, education has a big place in human life, so in this time education and technology are connected and they cannot be separated. In addition to this innovation will be activated, because technology is improving day to day and education should be improved at the same time with technology. This means students have to motivate to education system with latest technology. For example, smart boards, online education. These innovations have improved last 10 years and the level of the success is increased in education. Smart boards serve as a cognitive tool that expand students' mind and facilitate supported joint thinking. Since some of

the mental load is transferred from the students to the board, they are free to engage in higher thinking processes.

People can adapt to new technology. Also children start to use this technological equipment by themselves this means technology take big part in their life. In education system apply latest technology in their system, students will be more productive, creative and their skills will be more improved also with new technology their imagination will expand with visual technology (Behzadi & Manuchehri, 2013, p.3) claims that using this software is used for smart boards. Some features of this software are following as; “ 1) Easy to use and concepts, 2) Graphical and attractive environment, 3. Required numerous tools for any field, 4) contented to the ability to add content to the library, 5) Working to other tools in the environment, 6) Video recording option automatically without the need for low-volume transfer and dissemination on the Internet, 7) Drawing two dimensional and three dimensional geometric shapes, and 8) Drawing trigonometric functions, formulation, graphs.” Innovation and entrepreneurship cannot be separated.

On the other hand, Technological developments have an impact on all areas of our life one of which is education. They influenced the organization of teaching process. One of the leading tools of today’s educational technology is smart board. Smart board is an interactive whiteboard which exhibits the image on a touchable and writable screen. By the aid of smart board (SB) student can watch and listen teaching material (such as animations, videos, power point presentation or graphics), the teacher can save information for future use (for example class discussion at the end of the lesson) (Preston & Mowbray, 2008).In addition to this with smart boards, if any student miss class, they can catch it later and they have chance to revise subject when they want. Furthermore, smart boards make works easy to teachers because they can prepare questions, presentations in short time also smart boards help to improve creativity, productivity of students and teachers at the same time because they can use many symbols, images and tables.

The smart board (SB) was started to use in 1990s in European countries and USA. On the other hand, in Turkey have started to apply a project in a country and it’s called FATİH PROJECT, the projected started on 201.In Turkey the use of SB in the classes has become widespread with FATİH Project (MEB, 2011). The aim of

equipping classrooms with smart boards is to increase the effectiveness of teaching and to provide better learning environment. Because today's learners are growing up with iPad, computer, android phone and tablet. Teachers should be informed and encouraged for the effective use of technologies to meet the students' need. Moreover with this project the success level has started. The smart board using is the biggest example of innovation and entrepreneurship because technology and education intertwined.

### **Entrepreneurship and Innovation in Communication**

In present time, social media is the biggest part of human life, almost everyone has at least one social media account such like; Facebook, Instagram, twitter and they can get contact with other people around the world. Social media is the biggest innovation for human life. In addition to this, with social media people do not just contact with other people by social media, they earn money from it. Social Media has millions of active users. Some of the people use social media for being social and other half using for make money. In addition to this, in the world, social media is the biggest marketing tool. When social media has found it was just using for communication tool, but now it has significant role over economy and employment.

On the other hand, one of the aims of social media is creating employment, for example, entrepreneurship and social media is the biggest power over the economy. Firstly, people using social media for job opportunity, such as online shopping, web TV , online education these are new sector for earn money. In recent times, the most of the popular people making advertisement form social media and make money from it.

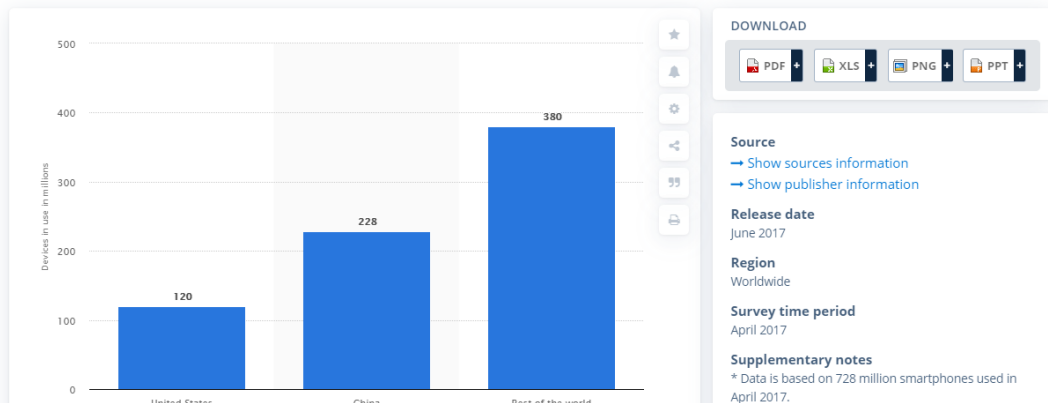
As mentioned above entrepreneurship is the activity of setting up a business or businesses, taking on financial risks in the hope of profit. In addition to this social media is improving from day to day, this means social media for example Instagram, Facebook and Twitter is updating day to day.

## **Social Media as Advertising Tool**

Today, technology is taking biggest part in human life. In addition to this, social media is the most important invention tool for technology. Firstly, communication, for being social, education, and shopping, advertising, marketing, research in brief social media is everything for humanity. As mentioned, in recent times social media is the biggest job opportunity for people, most of the people using social media to earn money. On the other hand; recently, Youtubers are popular, they make money from sponsors, advertising and so on, and this means social media is the most important innovation for technology. (KEMP, 2020) claims that more than 4.5 billion people now use the internet, while social media users have passed the 3.8 billion mark. Nearly %60 of the world's population is already online, and the latest trends suggest that more than half of the world's total population will use social media by the middle of this year.

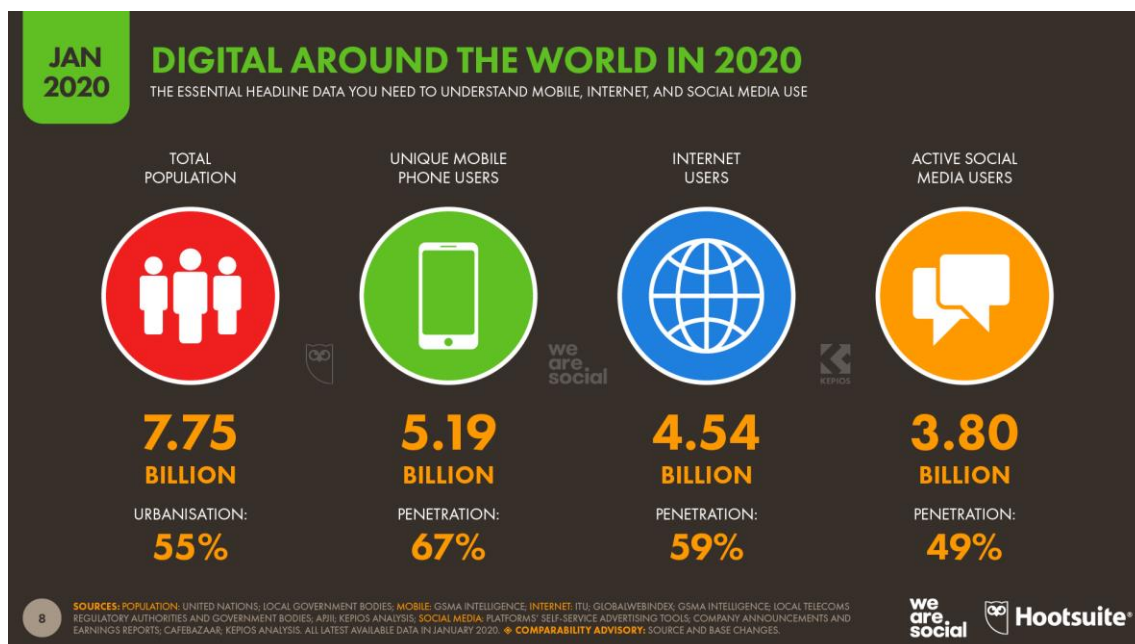
In another hand, the most using app is Facebook in the US. Facebook has 169.76 million mobile users in September 2019. In addition to this, Instagram and Facebook Messenger ranked second and third with 121 and 106 million users respectively. In addition to this, social media applications are updating every day. Innovation is important for maketing because people need innovation and they want to try new things also smart phones are the biggest example for it. Every year in September, world famous technology giant launches new products and millions of people waiting in line or in front of their laptops to buy them. Moreover, this company has similar type of smart phones but they change shape, colour, model of smart phones so these new change attract millions of people around the world. Approximately a billion people are using more than 1.4 billion Apple devices. Even as iPhone sales decline, Apple is bringing tens of millions of new people into its ecosystem each year.

Number of Apple iPhone devices in use in the U.S., China and the rest of the world in 2017\* (in millions)



**Figure 8.** Number of Apple iPhone devices in U.S. , China and the rest of the World in 2017

As showing above, this table illustrates that, in 2017, 120 million people were using Apple iPhone devices in United States following that, in China 228 million people were using Apple iPhone devices. In addition to this, 380 million people were using Apple iPhone devices rest of the world.



**Figure 9.** Digital Around in the World in 2020

As showing table above, we are social page and their partner company Hootsuite's statics show that, active social media users are 3.80 billion, internet users are 4.54 billion and unique mobile phone users are 5.19 billion. As you will be understand here, technology and social media is taking up space in human life.

On the other hand, journalism and innovation is popular in current climate in other words, virtual media journalism. Twitter is different from other social media apps. Twitter can be explained as; is a social network where users can post "tweets" limited to 280 characters. Generally people use Twitter for share their ideas and so on .However, after social media is included in human life, Twitter's role has changed for people. Social networking platforms transform traditional journalism practices while transforming professional requirements through a network-based model. With the Internet, the transition of both journalists and viewers to a participatory and collective communication system has led to the emergence of new routines in journalism.

### **Online Shopping and Covid-19**

As known the Covid-19 pandemic affected around the world and currently under influence. In this process human life has undergone major changes. Firstly, many sectors has affected negatively such as; tourism, aviation, education, entertainment and so on. Millions of people so to say the world closed for few months. This pandemic caused to people started to their jobs online in other words type of home office became popular in this process. In addition to this millions of people lost their jobs, millions of student did not get good education. After a while people decide to use technology to make money. First of all, online shopping for food and clothes, online concerts, online games these new things has changed human life and currently majority of people doing their works from their homes because the world under risk due to coronavirus.

Date on which the full sense of online shopping in Turkey and by whom is not known exactly where to start. However, it is foreseen that the examples in the world of online shopping starts after a short time in Turkey (Single and Orel, 2006: 122). Almost all businesses that have physical stores today have online shopping sites. In addition, group shopping sites are also popular. In this context, instead of

going from shop to store and trying to find the product they want at the price they want, consumers

They can find all of the products on the internet, besides; they can compare the prices and features and buy the products they want. As a result of the research carried out in line with the purpose of the study, it was determined that consumers' online shopping preferences changed by 64.5% during the Covid-19 epidemic process. Considering its distribution by demographic characteristics; Women with 68.3% say that their online shopping preferences have changed the most. In terms of age range, the group whose online shopping preference changes the most is between the ages of 18-24 with a rate of 75%. Considering the education level, it was determined that the online shopping preferences of the graduate students mostly changed with a rate of 70.7%. The change in online shopping preferences according to marital status was mostly among married individuals with a rate of 65.7%. When analyzed according to the number of individuals in the family; The online shopping preferences of the participants (all of them with a maximum number of 7 or more family members) have changed.

Today, most of the popular brands marketing via social media especially Instagram also they sell their products online. Majority of people shopping via online they buy clothes, shoes, bags also foods and so on. Moreover, most of the big companies doing their meeting via online. In another hand due to coronavirus, several companies decrease employees' .Most of the European country they passed to home office. On the other hand few private brands make innovation to attract more customers also they try to make competition between brands and increase their sales during this pandemic process. The differentiating features of private shopping sites that bring a new breath to online shopping and constantly change and transform in the services they offer to consumers are as follows, can be listed as; (Pelenk and et al 2011: 2) claims that;

1. Offering brand products to users at discount rates as high as 90%,
2. Having membership systems upon special invitation,



3. Products are offered to consumers under the name of "campaigns" only at certain time intervals, submission.

4. The users should notify the discontinuation period of the products on the site related to the products offered to see in day, hour, minute.

5. Original product warranty for many brands,

6. Presenting products to users in a certain number and having a purchase limit, when these features are examined, the contribution of private shopping sites to online shopping can be described as large. In online shopping, private shopping sites have a rate of 20%.Has accelerated the investments made in this field. Newly opened private shopping sites In addition, there are partnerships established by many entrepreneurs. (Yeniova, 2011: 46)

During this pandemic process, people make new events via online for example Djs played music their own home and made live videos via social media accounts also nutritionist shared videos for explain how people healthy eating during this process. In another hand, personal trainers shared videos for people to do an exercise and so on. These innovations brought people from all over the world together. The biggest influencer is social media because via social media millions of people will be together in a short time.

During the Covid-19 outbreak, technologies play an important role in keeping our society functional during the quarantine period. And these technologies are expected to have long-term effects beyond Covid-19. For example, in this process, online shopping and robot deliveries started to be mentioned more. Covid-19 has made online shopping a must-have. So much so that some Chinese e-commerce companies are also developing robot deliveries. In addition to the shopping and delivery process, places that offer digital and contactless payment options have become more advantageous in the eyes of citizens. Now, contactless digital payments in the form of cards or e-wallets have become the recommended payment methods to prevent the spread of Covid-19. We have also experienced a rapid transformation in the online entertainment industry. Online concert streaming has gained worldwide importance. Chinese film production companies have also published movies online.

Museums and international exhibition sites started to organize virtual tours for citizens.

Due to coronavirus most of the bills can pay via online because in this pandemic the biggest risk for spread out is contact so people want to decrease the risk make payments without contact and touch.

This is among the actors involved in the formation of the social media economy. There are companies that want to use the media as a marketing tool and agencies that serve these companies and research companies that analyse the requests and tracking statistics of users. However, today, the most income source is the advertising revenue obtained from watching these channels. Revenues are obtained through advertisements placed by applications such as YouTube, Google, Instagram and Facebook, and the person sharing the video is paid a certain amount of advertising fee, but it is not a fixed income. Thus, with the social media economy, a new perspective has come to existing professions, various facilities have been provided in the work done, and new professions have been formed (Uzgören & Korkmaz, 2015, p: 3)

On the other hand, during this quarantine process most of the Youtuber shared videos and reached to millions of people around the world. Increasing the number of users rapidly with continuous updates, YouTube reached 2 billion views per day in 2010. According to 2018 statistics, the number of daily active users is 30 million and the number of daily video views is over 5 billion. It is the world's most popular online video community, allowing millions of people to share watch and find videos of their original creation.

Social media gives an opportunity to reach millions of people with seconds so in this Covid-19 process most of the people get information from social media also authorized people informed people via social media. For example; Facebook, Instagram, Twitter and other social media accounts always gives notice about Covid-19 how they can protect, what are the risks also how they decrease the risk of virus. With this innovation millions of people had information about virus and protect themselves.

Developments in information technologies enable individuals to be instantly and easily informed about what is happening in the outside world. Individuals become a part of the information flow through the internet, which they can access at any time, and become both users and content producers. It comes. In an environment where the possibilities of observation, evaluation and instant information regarding the outside world are developing day by day, it becomes easier to be aware of the work of businesses on issues that concern society. Sustainability of businesses, reputation management, which is an important concept in terms of its reliability and being distinguished from competitors, is also progressing in a technology-mediated process. One of the founders of the Reputation Institute, Dr. Corporate reputation, the overall appeal of the business in the eyes of its target audience, according to Charles Fombrun ;it represents the “clear” emotional response of investors, customers, employees and the public about the company, good or bad, weak or strong (1997: 71). On the other hand, Kadıbeşgil defines corporate reputation as the contribution share of the trust created by the enterprise in the total market value, and expresses it as the equivalent of being a “liked and appreciated” enterprise (2012,59). Carmeli and Tishler (2005: 16) emphasize that reputation, which is defined as an abstract source representing the future performance of an enterprise provides a general assessment of the current assets of companies, and that it has characteristics such as reliability, credibility, accuracy and social responsibility.

Danah Boyd (2009), who examines social media, features of social media, five

He stated under the title:

- Continuous: content being permanent,
- Repeatable: reusability of contents,
- Searchable: easy search of content,
- Scalable: determining the extent of content spread,
- Independent of the environment: accessibility from any point.

As of January 2020 that 83.88 million population is 54 million active users of social media in Turkey and every Internet user spends the daily average of 7 hours 29 minutes görülmektedir.8 social media for review and reporting of data related to the use of internet, Facebook and Instagram were selected within the framework of the first report of 2020 by the social media organization "We Are Social".

In the study, how businesses benefit from social media for reputation management during the Covid-19 epidemic process, how reputation management works during this process within organizational structures is examined with numerical data obtained from social media platforms. Social business messages on the media platform were discussed; The content of the target audiences, the likes they receive, their watching status and the numbers were evaluated in a holistic approach.

Company	INSTAGRAM		FACEBOOK	
	FOLLOWERS	MESSAGE	FOLLOWERS	MESSAGE
KOC	156.000	5	270.576	4
ARCELIK	192.000	22	883.401	21
EZCAZIBASI	21.600	13	195.751	12

The number of followers on Facebook of the three businesses examined the number of followers on Instagram more than their number. On the other hand, the number of views of messages on Facebook is less than the number of views on Instagram. This situation is characteristics and the necessity of creating content within that framework. It is evaluated.

## CHAPTER III

### Method

#### Research Model

This research is a qualitative research planned to be conducted with semi-structured interviews. Qualitative research, in terms of making events and perceptions in natural environments, being holistic and providing in-depth information on the subject it is frequently preferred in accordance with their subject (Yıldırım & Şimşek, 2005). In qualitative research, the most frequently used tool among data collection tools is interview. The interview allows providing in-depth information on the topics determined. In this context, the research was carried out with semi-structured interview technique. Semi-structured interview, no answer category, it is implemented with questions, all of which will be answered by the participant with original sentences.

#### Universe and Sample

In this work will research about the education system in TRNC and as it is known, the pandemic has taken over the whole world. Most of the countries started to do online / distance learning which means they are doing lessons from homes. In Cyprus, all private and public schools started to do online / distance learning so in this research, the researcher aimed to find out if this new system adapted to Cyprus also wants to find out if technology and education are combined, does education level will be increased?

In this research 75 participants will be involved. The researcher will do interview with the participants, it is going to be semi-structured interview. In addition to this, this research will be applied to middle school in TRNC.

<b>Gender</b>	<b>Number</b>	<b>%</b>
Female	40	53.3
Male	35	46.7

**Figure 1.** Gender of participants

As shown above the Figure 1 illustrates the gender of participants, in this research 40 female and 35 male has involved in this research. In addition to this, participants formed %53.3 female and % 46.7 male.

<b>Job</b>	<b>Number</b>	<b>%</b>
Teacher	25	33.3
Manager	25	33.3
Stakeholder	25	33.3

**Figure 2.** Number of participants

In Figure 2, the table showed that, interviews made with 25 teachers, 25 managers and 25 stakeholders. These participants has answered to researcher`s questions.

<b>Age</b>	<b>Number</b>	<b>%</b>
25-30	8	10.7
31-35	20	26.7
36-40	25	33.3
41-45	19	25.3
46+	3	4

**Figure 3.** Age of participants

In Figure 3 proved the age of the participants; 8 participants are 25-30 years old, 20 participants 31-35 years old. Furthermore, there are 25 participants between the ages of 36 and 40. In addition to this, 19 participants age is between 41-45 years old. Lastly, 3 participants are 46+. On the other hand, in this table proved that 5 participants have involved in this research. The ages of participants between 36 and 40 with %33.3.

<b>Education</b>	<b>Number</b>	<b>%</b>
University	45	60
Master	25	33.3
PhD	5	6.7

**Figure 4.** Education of participants

In this table showing that participant`s education level.45 participants have undergraduate degree. Moreover, 25 participants have Master degree and 5 participants have PhD degree. The majority of the participants have undergraduate degree with %60

<b>Teacher</b>	<b>Years</b>
15	6-10
10	1-5

**Figure 5.** Experience of participants

As shown above, the table explain that the years of experience of teachers who participated in these research.15 teachers have 6-10 years and 10 teachers have 1-5 years` experience in their job.

<b>Manager</b>	<b>Years</b>
20	11-16
5	17-23

**Figure 6.** Experience of participants

As shown, Figure 6 provided the experience of managers. The first column shows that, 20 managers have 11-16 years` experience. In addition to this, 5 managers have 17-23 years` experience in their job which is taking role at schools as manager.



<b>Stakeholder</b>	<b>Years</b>
10	1-5
15	6-10

**Figure 7.** Experience of participants

As shown, Figure 7 provided the experience of managers. The first column shows that, 10 stakeholders have 1-5 years' experience. In addition to this, 15 managers have 6-10 years' experience in their job.

### **Data and Collection**

Standardized open-ended questions and interview technique were used in this study. Therefore, a semi-structured interview form was prepared and applied in order to determine the opinions of the participants. Some reassuring statements were included in the interview form to gain the trust of the participants. While developing this form, similar studies previously conducted in the field or in other fields were examined and semi-structured open-ended questions were determined by arranging them in accordance with the subject, importance and purpose of this research. In order to ensure the internal validity of the interview form, the interview form, research questions and the content of the interview questions, opinions and suggestions of the faculty member and a language expert were received for the comprehensibility of the questions. Thus, the content of some questions was removed from the list of interview questions due to similarities, taking into account the clarity and comprehensibility of the questions, their suitability for the specified purpose, and the suggestions regarding the order of the questions or combined, clarity of some questions was improved and the interview form was finalized.

The semi-structured interview form was piloted and the interview form was reviewed and took its final form. In semi-structured interview forms; Formal changes such as the wording of the questions and the appropriateness of the order of

questions were made. The data source of the research consists of the written records obtained from the interviews with the participants. The hours of the meeting were discussed with the participants and the appropriate days and hours were determined for them. Participants In order for the participants to give sincere and sincere answers before the application is started, the purpose and importance of the research will be kept confidential and the quotations to be made from the opinions or suggestions they will express during the interview.

They were informed that it would be given by coding. After these statements, audio recordings were taken from the interviews, and meetings were held over Google meet or face-to-face at the appropriate time for both parties. Interviews with the participants lasted between 25 minutes and 35 minutes. In addition, it was avoided to direct the participants in the direction of the answers of the questions and the audio recordings obtained were analysed and written on the computer in text form without modification. Coding has been done for the purpose.

The formula of Miles and Huberman was used to calculate the reliability formula of the study. In order to do this, some of the data was given to a different researcher and it was aimed to create the themes. The themes created with the main themes were compared. Then, the coding keys and interview transcripts were read separately by the researchers, and the issues with “consensus” and “disagreement” were discussed and the necessary arrangements were calculated.

As a result of the comparison of these two experts, it was seen that they agreed with a similar rate of 90% between the two theme groups. Since this percentage is above the 70% similarity threshold predicted in the literature, the themes have been verifiable and considered reliable. At the end of this study, the validity of the question items was determined. Considering that the interview questions provided the required data, the data collection process was started.

### **Data Analysis**

After the data is collected, content analysis is done and common content is found. The process of defining, coding and categorizing data is explained as content analysis. The audio recordings taken during the interview were transferred to the

computer environment using Microsoft Office Word 2010 program after the interview. The process of transferring the data to the computer environment by the researcher, it has also led to positive results such as the clarification of the conceptual framework by the researcher.

Pilot interview by selecting 1 Teacher, 1 Manager and 1 Stakeholder has been made. Thus, it was provided to determine whether the questions were clear and understandable, and whether the answers given reflected the answers to the questions asked. For this purpose, the interview form created in the computer environment of the voices recorded during the interview was converted into written form. Afterwards, two other experts were asked to examine the transcripts and check whether the questions asked were clear and understandable, whether they covered the subject at hand and the possibility of providing the necessary information. It was found that these two experts agreed with 90%. As a result of our study, the validity of the question items was determined and the data collection phase was started. Content analysis was applied to the data obtained.

It is obtained through analysis by dividing the data into categories into groups and the similarities and differences between the answers given by the participants. NVIVO 12 Plus qualitative data analysis program was used in the process of grouping the data obtained in the research into categories and coding. With the NVIVO 12 Plus program, a wide range of contents can be easily coded, the information is simply organized so that it is possible to have full control of the data. NVIVO 12 Plus program allows fast recall and later analysis while coding. This software has provided great convenience in finding common expressions among the answers given to the same question. The obtained data were interpreted by digitizing. Qualitative data are quantitatively quantified and specific the data passing through the processes are numerated. Processes, observations, interviews and examination of documents and their conversion into numbers. Simple percentage calculations and frequency analysis are used when digitizing data, and with this method, the reliability of qualitative data is increased, bias is reduced and the data comparison is provided. In this study, the digitization of qualitative data was achieved by statistical calculations with NVIVO 12 Plus qualitative data analysis software.

The first step in data analysis is to search for data. In qualitative research initial explanatory analysis, establishing a general meaning of the data, taking short notes on ideas, thinking about organizing the data, and determining whether further data collection is needed covers.

The final stage in theme development is to reach a point where themes are fully developed and new evidence does not provide additional themes. In other words, the point where the main themes are defined and the researcher cannot add a new theme to the theme list from the new information or a detail to the existing themes is the point of satisfaction in theme development is named. The realization that the researcher has reached this satisfaction point is a subjective evaluation. The researcher found evidence through specific examples and quotations to describe the themes, and when returning to the breakdown of the data and repeating them.

It can be said that when he reads it again and does not encounter any new information, he reaches the saturation point with these themes. In addition, this researcher confirms that he / she has identified these themes sufficiently with participant confirmation. Also for the accuracy of the coding opinions were received from field experts and experts in qualitative research. As a result of qualitative data researches, themes were created after collecting the data under certain categories. Providing the participants with the occupational information in the demographic features part of the first part of the interview form, it has been stated that the statements or suggestions they will make during the view will be coded in the thesis. Teacher, Manager and Stakeholder opinions participating in the research were written on the computer in text form and presented to the readers as a result of the analysis of the records obtained. Coding was used without specifying the names of the participants. For example; (T1): The first Teacher participating in the research states his opinion. (M2): The second Manager participating in the study gives his opinion. (S2): The second Stakeholder participating in the study expresses his opinion.

In the light of the obtained data, codes and general categories defining them were determined and analysed by considering written records, codes and categories. Then, the research report, in which the results were evaluated, was interpreted in the light of the relevant literature.

## **Validity and Reliability**

While performing the validity study of data analysis, the codes and exactly cited views of the managers from which the categories were obtained. The internal validity of the study was ensured by examining the data with a critical eye and checking whether the results are true or not, examining the raw data and analysis by experts and receiving feedback. In addition, the collected data were submitted for the verification of the source participants. External validity was provided by including direct quotations.

Internal reliability is consistency; similar collection of data, data consistency in coding has been achieved by establishing the relationship between the data and the results. External reliability is verifiability; an outside expert in research the judgments, comments and suggestions reached were compared with raw data and confirmed.

In this part of the study, reliability calculations were made in two parts as the reliability calculation in the analysis phase after the non-pilot application and the data collection after the pilot application. In the pilot application in the first phase, the reliability analysis was calculated using the manual analysis method and the reliability formula proposed by Miles and Huberman, due to the lack of comfort in using computers due to the small data set, ethical concerns and sufficient time.

In the second stage, in the analysis stage after the data collection after the pilot application, in the reliability calculation, the Computer Analysis method was preferred due to the large data set, the convenience of using the computer, the availability of data sources and the need to closely follow the data, the "Coding Comparison Query" available in the NVivo 12 Plus program. The percentage of agreement between the researcher and the coder with the help of reliability was calculated with Cohen's Kappa coefficient.

After the interviews were made for both phases, the data obtained from the participants were analyzed and divided into meaningful sections, and these sections, which form meaningful wholes, were named and coded. After all the data was coded

in this way, a code list was created and it served as a key list in the analysis and arrangement of these data.

For the first stage, the coding keys and interview transcripts were read separately by the researchers, and the issues with "consensus" and "disagreement" were discussed and the necessary regulations were calculated. For the reliability calculation of the research, it was calculated by using the reliability formula suggested by Miles and Huberman. Accordingly, some of the data were given to another researcher to form the themes. This researcher created themes based on the data and these themes were compared with the main themes. This, the similarity between the two themes groups is 90% calculated. Since this percentage is above the 70% similarity threshold predicted in the literature, the themes have been verifiable and considered reliable.

For the second phase, the data recorded during the interviews with the participants within the scope of the research were transferred to the computer by the researcher using the Microsoft Office Word 2010 program from text editor software. The data saved in the Word file is then transferred to the NVivo 12 Plus Qualitative Data Analysis Program and the categories, subcategories and codes are it has been created in a systematic way. In order to ensure the reliability of the coding made by the researcher himself, a second coder with the help of the "user profiles" in the NVivo 12 Plus program carried out the transfer processes to the categories, subcategories and codes created by the researcher. Available in the NVivo 12 Plus program with the help of the "Coding Comparison Query", the percentage of agreement between the researcher and the coder and Cohen's Kappa coefficient were calculated.

In order to interpret the Kappa (fit) values obtained in the studies, they presented the following ranges: 0.0-0.20 insignificant agreement, 0.21-0.40 below moderate agreement, 0.41-0.60 moderate agreement, 0.61 -0.80 indicates a good level of agreement, 0.81-1.00 indicates a very good level of agreement. In the research, in the interviews with teachers and administrators, the percentage of agreement was 0.98 and the Kappa coefficient was 0.89. Since Kappa values of 0.81 and above were stated to be very good, reliability was provided in terms of data

analysis. Links between categories, subcategories and codes created by the researcher himself. Models are included to enable visualization.

In the last stage of the data analysis, the findings were interpreted. Interpretation of the findings described and presented in detail was made at this last stage. The collected data were interpreted through the stages required by qualitative research, and some results were obtained. Explanations on the significance of the results are supported with the help of the literature.

### **The Role of the Researcher**

Research approach; Philosophy is research design, data collection and analysis. When planning a research, researchers take into account their assumptions about their philosophical worldviews, their assumptions about their studies, and the specific methods and process steps that will transform their research design and approaches related to this worldview cause to rise. Unlike quantitative research, where the researcher is not a very important factor for him, the researcher plays an important role in qualitative research and is the main instrumental researcher for data collection and data analysis in qualitative research. Because qualitative researchers usually collect data from the areas they work or have problems with.

The researcher has taken a primary prevention role in all stages of the research, especially in the data collection and analysis stages, and has been found as an interpreter and researcher in the research. The results of the study have been aware that the researcher depends on reliability, competence, diligence and integrity. This does not mean neutrality. Because the researcher is unaware of values, judgments and socio-political developments and human relations.

The success of the research depends largely on the skill of the researcher. Because the qualitative researcher's basic qualities and competencies should be well developed to establish processes such as mutual trust, establishing and maintaining good relationships, mutual respect, and attention to sensitive ethical issues. It should also have the capacity and ability to anticipate and understand the researcher's other concepts and processes. In this study, the working group from which the data was obtained, education entrepreneurship and they are members of the epistemic society,

who have a problematic situation to conduct research, work and experience all processes in the region in the field of innovation. The researcher is a member of the epistemic community.

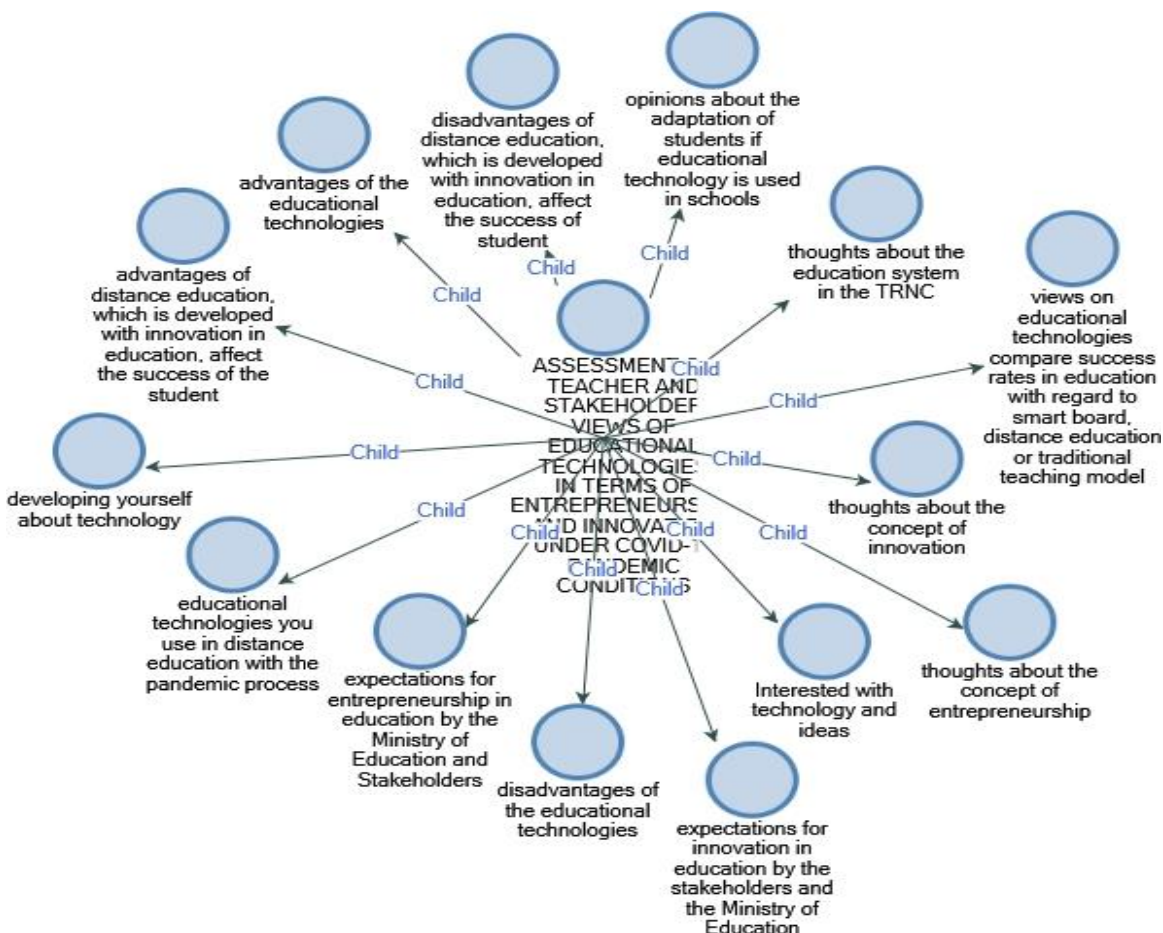
The researcher, by reading the literature, designing the research, she participated in the qualitative research process by preparing, interviewing the participants personally, reading the audio recordings, analysing and interpreting the findings. He has already done interviews in various researches and has developed himself both theoretically and practically. Researcher, data collection, data analysis and interpretation, etc. In addition, this process has been particularly rigorous to ensure that study knowledge is taken from the field of study and that data sources are placed in the highest academic position by the researcher.

The researcher can have different implications for cultural history, interests, experiences, prejudices, meanings for specific topics, active evidence supporting the position, and knowledge of the participants. Anyway, the basis of qualitative research: The ontological, epistemological, methodological and axiological orientations of the research manifest themselves in the stages of the research, sometimes explicitly and sometimes implicitly. "So" means the approach is unthinkable. Therefore, it cannot be considered that there are pre-assumptions and presuppositions about the problem situation of the study. For this reason, the data obtained in this study can only be a partial explanation of the problem that is tried to be found based on these findings and the interpretations emerging from these data, and there is no case that it is accurate information.



## CHAPTER IV

### Findings

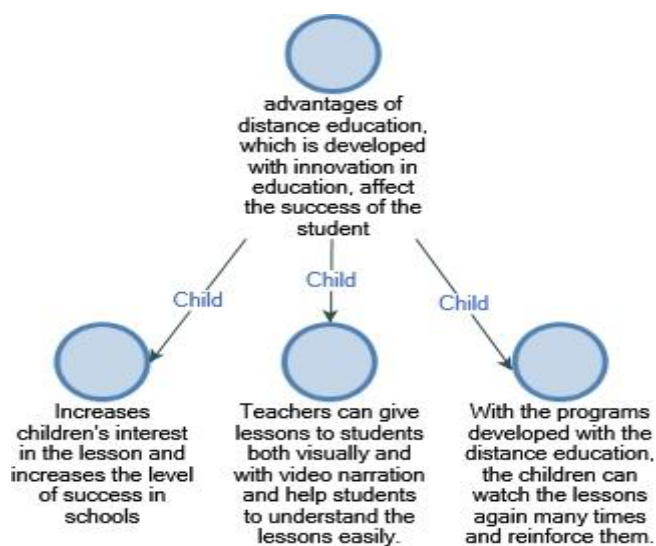


**Figure 10.** The Theme and Sub-Themes Regarding the Research Model Revealed as a Result of Data Analysis in Qualitative Research

Nvivo 12 Plus Data on the Theme and Sub-Theme Distribution Map of the Participant's Views Regarding the Research Model Revealed as a Result of the Analysis of the Data in the Qualitative Research.

In the qualitative research, according to the views of the participants, the problem sentence named assessment of teacher and stakeholder views of educational technologies in terms of entrepreneurship and innovation under covid-19 pandemic

conditions and the Analysis of the data for sub-problems The Themes and Sub-Themes that emerged as a result of the analysis of the sub-problems are indicated in the research model in Figure 1. . When the research model is examined, assessment of teacher and stakeholder views of educational technologies in terms of entrepreneurship and innovation under covid-19 pandemic conditions are given as subthemes. The themes of participant views are indicated in the chart above. Sub-themes and detailed findings in the light of these themes are presented in the following charts.



**Figure 11.** Theme and Sub-Themes Distribution Map (Maps Project) Nvivo  
12 Plus Data of advantages of educational technologies

**Table 1:***Advantages of the educational technologies*

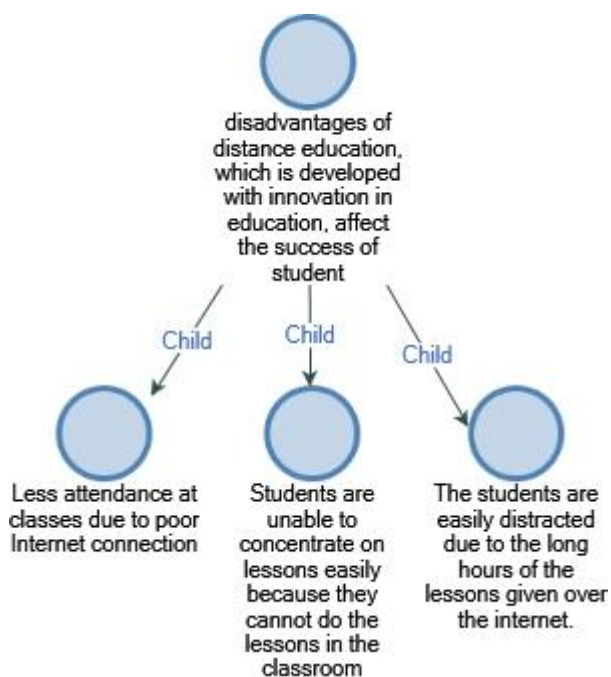
<b>THEME</b>	<b>TEACHERS</b>	<b>MANAGERS</b>	<b>STAKEHOLDERS</b>
Increasing the success level of children	7	8	3
Increase in children's motivation	10	-	2
Teachers can transfer more information to students in a short time	3	10	12
The development of students' imagination	5	7	8

In this thesis, 75 people participated in the research on innovation and entrepreneurship in education. We can define them as teachers, managers and stakeholders (hardware developers and technology companies). 7 teachers stated that, increasing the success level of children. Another 10 participants stated that increase in children's motivation. 3 teachers said that, teachers can transfer more information to students in a short time, 5 participants the development of students' imagination. 8 managers stated that, increasing the success level of children. 10 managers said that, teachers can transfer more information to students in a short time, 7 managers the development of students' imagination. 3 stakeholders stated that, increasing the success level of children. 2 stakeholder participants stated that increase in children's motivation. 12 stakeholders said that, teachers can transfer more information to students in a short time, 8 participants which are stakeholders the development of students' imagination. According to this table, students have to do many things digitally in education.

*(T10) said that; “With the use of technology in education, the motivation of students will increase.”*

*(M7) said that; “Combining technology in education will contribute to the increase of student’s imagination.”*

*(S12) said that; “With the new system, educators will be able to transfer more to students in a short time.”*



**Figure 12.** Theme and Sub-Themes Distribution Map (Maps Project) Nvivo 12 Plus

Data of disadvantages of educational technologies

**Table 2:***Disadvantages Of The Educational Technologies*

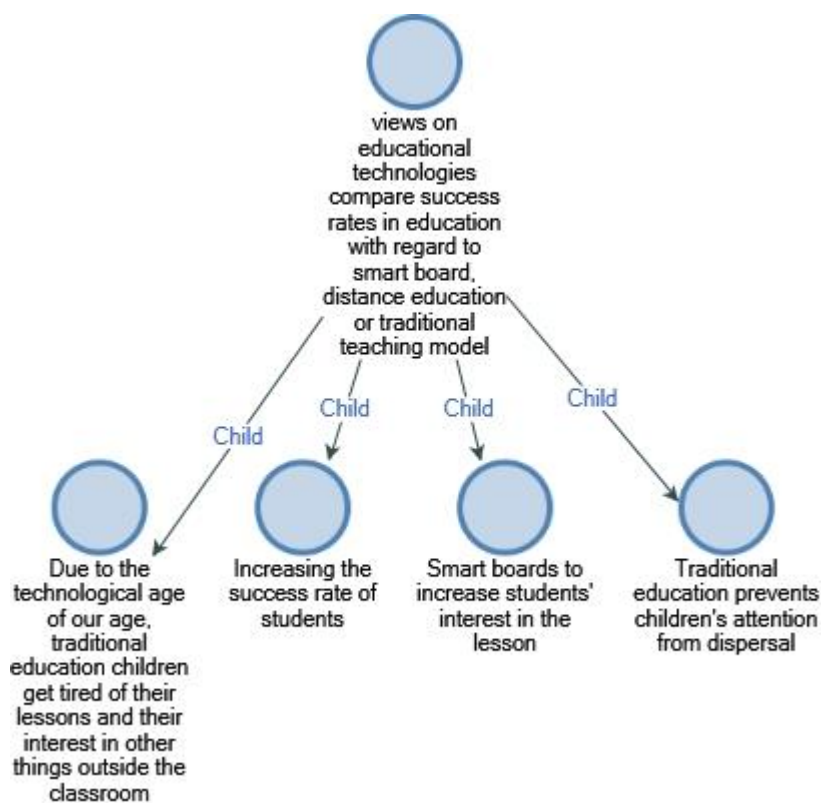
<i>THEME</i>	<i>TEACHERS</i>	<i>MANAGERS</i>	<i>STAKEHOLDERS</i>
Distraction for students	10	8	7
Lack of technological equipment in students	3	2	6
Lack of knowledge of teachers about information technologies	7	8	7
Teachers and students not being able to adapt to the new system	5	7	5

In Table 2, we asked teachers, stakeholders and administrators what the disadvantages are about technological equipment in the education system. The answers are as follows; 10 teachers said that, distraction for students. 3 teachers stated that, lack of technological equipment in student. 7 teachers said that, lack of knowledge of teachers about information technologies. In addition to these, 5 teachers said that, teachers and students not being able to adapt to the new system. 8 managers said that, distraction for students. 2 managers stated that, lack of technological equipment in student. 8 manager claimed that, lack of knowledge of teachers about information technologies. In addition to these, 7 managers said that, teachers and students not being able to adapt to the new system. 7 stakeholders said that, distraction for students. 6 stakeholders stated that, lack of technological equipment in student. 7 stakeholders said that, lack of knowledge of teachers about information technologies. In addition to these, 5 stakeholders said that, teachers and students not being able to adapt to the new system. According to this table, students have to take equal education such as, ministry of education need spread out Ipad or Laptops who are taking education in private and public schools.

*(T7) said that; “The biggest disadvantage of technology used in education is teachers' lack of knowledge about technology.”*

*(M8) said that; “I believe that the use of technology can cause distraction in students.”*

*(S5) said that; “Inability and failure of students and teachers to adapt to the new education system in our country.”*



**Figure 13:** Theme and Sub-Themes Distribution Map (Maps Project) Nvivo 12 Plus

**Table 3:**

*Views On Educational Technologies Compare Success Rates In Education With Regard To Smart Board, Smart Learning Or Traditional Teaching Model*

THEME	TEACHERS	MANAGERS	STAKEHOLDERS
Increasing the success rate of students	2	8	10
Smart boards to increase students' interest in the lesson	18	5	2
Traditional education prevents children's attention from dispersal	3	7	8
Due to the technological age of our age, traditional education children get tired of their lessons and their interest in other things outside the classroom	2	5	5

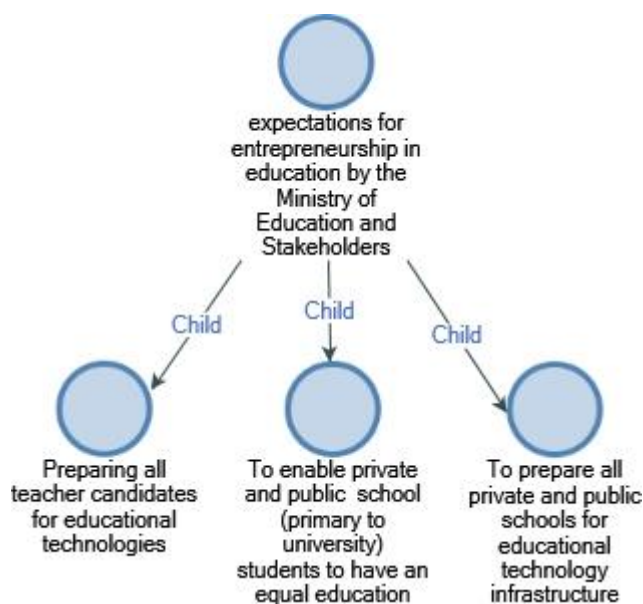
In Question 2, we asked our participants to compare educational technologies and traditional education. Answers are as follows; 2 teachers said that, increasing the success rate of students .18 teachers claimed that, smart boards to increase students' interest in the lesson.3 teachers specified, traditional education prevents children's attention from dispersal. Moreover, 2 teachers said that, due to the technological age of our age, traditional education children get tired of their lessons and their interest in other things outside the classroom. 8 managers said that, increasing the success rate of students .5 managers claimed that, smart boards to increase students' interest in the lesson.7 managers specified, traditional education prevents children's attention from dispersal. Moreover, 5 managers said that, due to the technological age of our age, traditional education children get tired of their lessons and their interest in other things outside the classroom.10 stakeholders said

that, increasing the success rate of students .2 stakeholders claimed that, smart boards to increase students' interest in the lesson.8 stakeholders specified, traditional education prevents children's attention from dispersal. Moreover, 5 stakeholders said that, due to the technological age of our age, traditional education children get tired of their lessons and their interest in other things outside the classroom. According to this table, technology should join the education more and students should adapt to the new system.

*(T18) said that; “I am convinced that teachers 'use of smart boards in classrooms will increase students' interest in lessons.”*

*(M7) said that; “I think it helps students avoid distraction and allows them to concentrate better in traditional education.”*

*(S5) said that; “Because we live in a technological age, the traditional education system will soon tire of children from the lessons and their interest will shift to another direction.”*



**Figure 14:** Theme and Sub-Themes Distribution Map (Maps Project) Nvivo 12 expectations for entrepreneurship in education by the Ministry of Education and Stakeholders



**Table 4:**

*Expectations For Entrepreneurship In Education By The Ministry Of Education And Stakeholders*

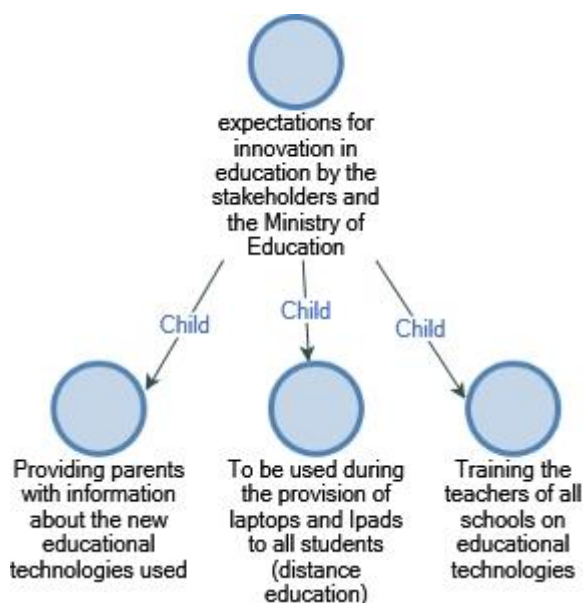
<i>THEME</i>	<i>TEACHERS</i>	<i>MANAGERS</i>	<i>STAKEHOLDERS</i>
Preparing all teacher candidates for educational technologies	3	7	8
To prepare all private and public schools for educational technology infrastructure	7	8	5
To enable private and public school (primary to university) students to have an equal education	15	10	12

The answers given by the participants; 3 teachers said that, preparing all teacher candidates for educational technologies. 7 teachers claimed that, to prepare all private and public schools for educational technology infrastructure. Furthermore, 15 teachers said that, to enable private and public school (primary to university) students to have an equal education. 7 managers said that, preparing all teacher candidates for educational technologies. 8 managers claimed that, to prepare all private and public schools for educational technology infrastructure. Furthermore, 10 managers said that, to enable private and public school (primary to university) students to have an equal education. 8 stakeholders said that, preparing all teacher candidates for educational technologies. 5 stakeholders claimed that, to prepare all private and public schools for educational technology infrastructure. Furthermore, 12 stakeholders said that, to enable private and public school (primary to university) students to have an equal education. According to this table, all teachers need to learn how to use technological items for education by this way; they will be more efficient over students.

*(T7) said that; “All private and public schools need to be prepared for technological infrastructure.”*

*(M7) said that; “To prepare educators in private and public schools for the new system and to get efficiency from the new system.”*

*(S12) said that; “To ensure that all students receive equal education in all schools from primary school to university.”*



**Figure 15:** Theme and Sub-Themes Distribution Map (Maps Project) Nvivo 12  
 expectations for innvation in education by the Ministry of Education and  
 Stakeholders

**Table 5:**

*Expectations For Innovation In Education By The Stakeholders And The Ministry Of Education*

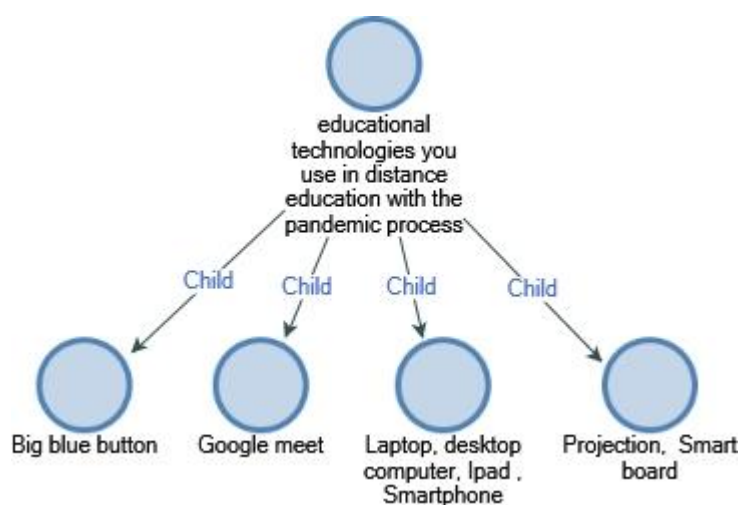
<b>THEME</b>	<b>TEACHERS</b>	<b>MANAGERS</b>	<b>STAKEHOLDERS</b>
To be used during the provision of laptops and Ipads to all students (online/ smart learning)	8	10	5
Training the teachers of all schools on educational technologies	10	7	8
Providing parents with information about the new educational technologies used	7	8	12

In Question 4, we asked our participants what their expectations are for innovation, and the answers are as follows; 8 teachers said that, to be used during the provision of laptops and Ipads to all students (smart/ online learning).10 teachers claimed that, training the teachers of all schools on educational technologies. On the other hand, 7 teachers specified that, providing parents with information about the new educational technologies used.10 managers said that, to be used during the provision of laptops and Ipads to all students (smart learning).7 managers claimed that, training the teachers of all schools on educational technologies. On the other hand, 8 managers specified that, providing parents with information about the new educational technologies used.5 stakeholders said that, to be used during the provision of laptops and Ipads to all students (online learning).8 stakeholders claimed that, training the teachers of all schools on educational technologies. On the other hand, 12 stakeholders specified that, providing parents with information about the new educational technologies used. According to this table, all private and public schools need to make update so students can be more successful.

*(T10) said that; “To prepare and train teacher candidates for technologies by using them in the new system.”*

*(M10) said that; “Providing laptop, Ipad and technological devices to all students in the new system (smart learning) due to the pandemic.”*

*(S12) said that; “To raise awareness of families about this new system in our country and to increase the success of students of this new system.”*



**Figure 16.** Theme and Sub-Themes Distribution Map (Maps Project) Nvivo 12 educational technologies you use in online learning with the pandemic process

**Table 6:***Educational Technologies You Use In Online Learning With The Pandemic Process*

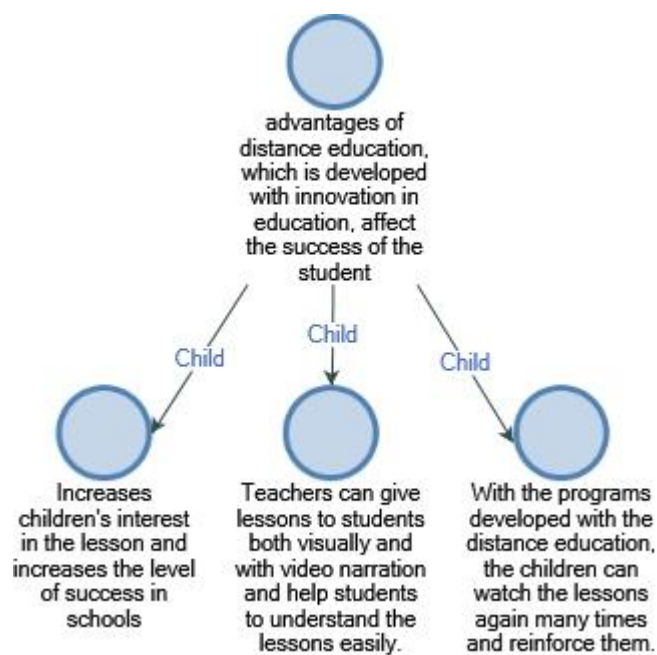
<i>THEME</i>	<i>TEACHERS</i>	<i>MANAGERS</i>	<i>STAKEHOLDERS</i>
Google meet	10	15	3
Big blue button	2	-	2
Laptop / desktop computer / Ipad / Smartphone	8	5	5
Projection / Smart board	5	5	15

In the 5th question of our survey, we asked our participants which educational technologies they use in our education system. 10 teachers said that, they are using Google meet, 2 teachers said, they are using, Big blue button program. 8 teachers specified that, Laptop / desktop computer / Ipad / Smartphone. In addition to these, 5 teachers using Project / smart board. 15 managers said that, they are using Google meet, 5 managers specified that, Laptop / desktop computer / Ipad / Smartphone. In addition to this, 5 managers said that they are using Projection / Smart board. 3 stakeholders said that, they are using Google meet, 2 stakeholders said, they are using, Big blue button program. 5 stakeholders specified that, Laptop / desktop computer / Ipad / Smartphone. In addition to these, 15 stakeholders said that, they are using Projection / Smart board. According to this table, they can use domestic education software for online / distance learning.

*(T10) said that; “We switched to the smart learning system due to the pandemic and used the Google meet program during this period.”*

*(M5) said that; “Due to the virus that spread all over the world, we continued our education with smart learning for a while and most of the technological devices we used in this period were laptops, desktop computers, Ipads and smart phones.”*

(S2) said that; *“In the new system, we used the big blue button program in the online education process.”*



**Figure 17:** Theme and Sub-Themes Distribution Map (Maps Project) Nvivo 12  
 advantages of smart learning, which is developed with innovation in education, affect  
 the success of the student

**Table 7:**

*Advantages Of Smart Learning, Which Is Developed With Innovation In Education, Affect The Success Of The Student*

<b>THEME</b>	<b>TEACHERS</b>	<b>MANAGERS</b>	<b>STAKEHOLDERS</b>
Increases children's interest in the lesson and increases the level of success in schools	5	8	9
With the programs developed with the smart learning, the children can watch the lessons again many times and reinforce them.	5	15	2
Teachers can give lessons to students both visually and with video narration and help students to understand the lessons easily.	15	2	14

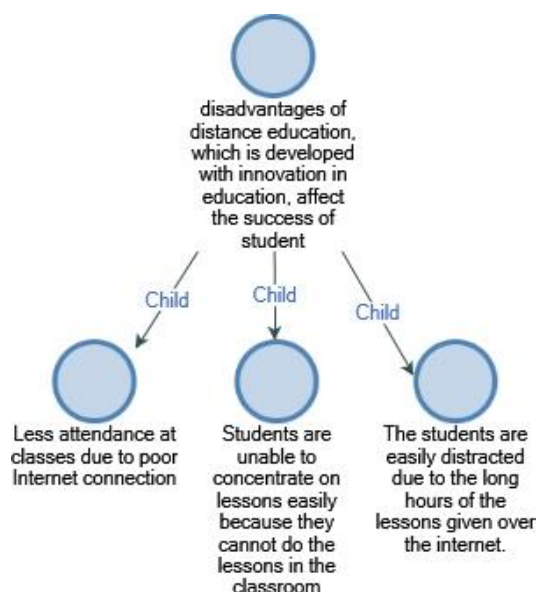
In this part of the questionnaire, we asked what advantages and disadvantages there might be in the new system developed for innovation / smart learning, and 5 teachers said that, increases children's interest in the lesson and increase the level of success in schools.5 teachers claimed that, with the programs developed with the online learning , the children can watch the lessons again many times and reinforce them. In addition to this, 15 teachers specified that, teachers can give lessons to students both visually and with video narration and help students to understand the lessons easily.8 managers said that, increases children's interest in the lesson and increase the level of success in schools.15 managers claimed that, with the programs developed with the smart learning, the children can watch the lessons again many times and reinforce them. In addition to this, 2 managers specified that, teachers can give lessons to students both visually and with video narration and help students to understand the lessons easily.9 stakeholders said that, increases children's interest in the lesson and increase the level of success in schools.2 stakeholders claimed that, with the programs developed with the online learning , the children can watch the

lessons again many times and reinforce them. In addition to this, 14 stakeholders specified that, teachers can give lessons to students both visually and with video narration and help students to understand the lessons easily. According to this table, sometimes schools make distance learning because students need to adapt to new system and they can be more efficient in lessons.

*(T15) said that; “The innovations made in smart learning and education have brought advantages along with them. Teachers provided both visual and video lectures to the students so that they could easily understand the lessons.”*

*(M8) said that; “With the use of technology in education, it increases students' interest in lessons and thus we have seen that students are more successful in lessons.”*

*(S2) said that; “Thanks to the education programs used in online learning in education, students have the opportunity to watch and repeat the lessons many times.”*



**Figure 18:** Theme and Sub-Themes Distribution Map (Maps Project) Nvivo 12

disadvantages of online learning, which is developed with innovation in education,  
affect the success of student



**Table 8:**

*Disadvantages Of Smart Learning, Which Is Developed With Innovation In Education, Affect The Success Of Student*

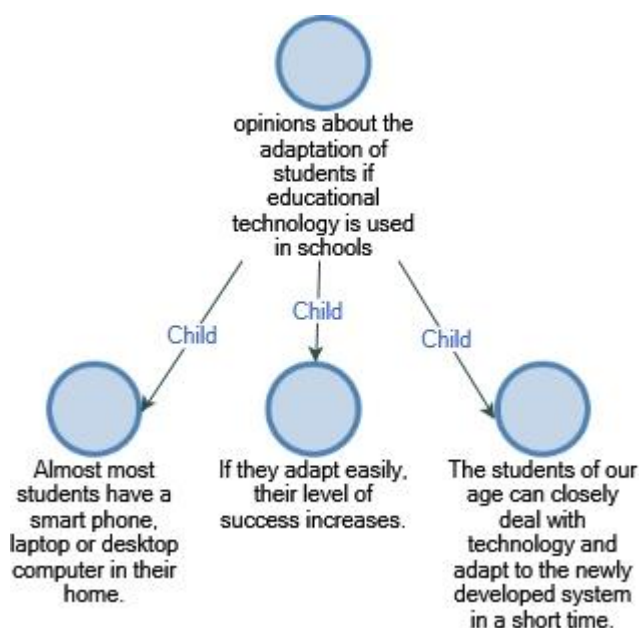
<b><i>THEME</i></b>	<b><i>TEACHERS</i></b>	<b><i>MANAGERS</i></b>	<b><i>STAKEHOLDERS</i></b>
Less attendance at classes due to poor Internet connection	12	9	15
The students are easily distracted due to the long hours of the lessons given over the internet.	3	12	-
Students are unable to concentrate on lessons easily because they cannot do the lessons in the classroom	10	4	10

In the 6th question, we asked the participants to give their answers as advantages and disadvantages, and we stated the advantages and the answers in the table above, and the disadvantages in this table. 12 teachers said that, less attendance at classes due to poor Internet connection. 3 teachers claimed that, the students are easily distracted due to the long hours of the lessons given over the internet. In addition to these, 10 teachers specified that, students are unable to concentrate on lessons easily because they cannot do the lessons in the classroom. 9 managers said that, less attendance at classes due to poor Internet connection. 12 managers claimed that, the students are easily distracted due to the long hours of the lessons given over the internet. In addition to these, 4 managers specified that, students are unable to concentrate on lessons easily because they cannot do the lessons in the classroom. 15 stakeholders said that, less attendance at classes due to poor Internet connection. In addition to these, 10 stakeholders specified that, students are unable to concentrate on lessons easily because they cannot do the lessons in the classroom. According to this, this is a new system so all students were not ready for it but now, they tried it and ministry of education need to help to provide all technological items.

*(T3) said that; “Due to the pandemic, students had to follow the lessons on the internet, but students' spending a long time in front of the computer may cause distraction.”*

*(M9) said that; “Could not show students to attend classes at times due to poor internet infrastructure.”*

*(S10) said that; “The students attended the classes at home, so the classroom environment could not be provided and the students were experiencing a lack of concentration.”*



**Figure 19:** Theme and Sub-Themes Distribution Map (Maps Project) Nvivo 12  
opinions about the adaptation of students if educational technology is used in schools

**Table 9:**

*Opinions About The Adaptation Of Students If Educational Technology Is Used In Schools*

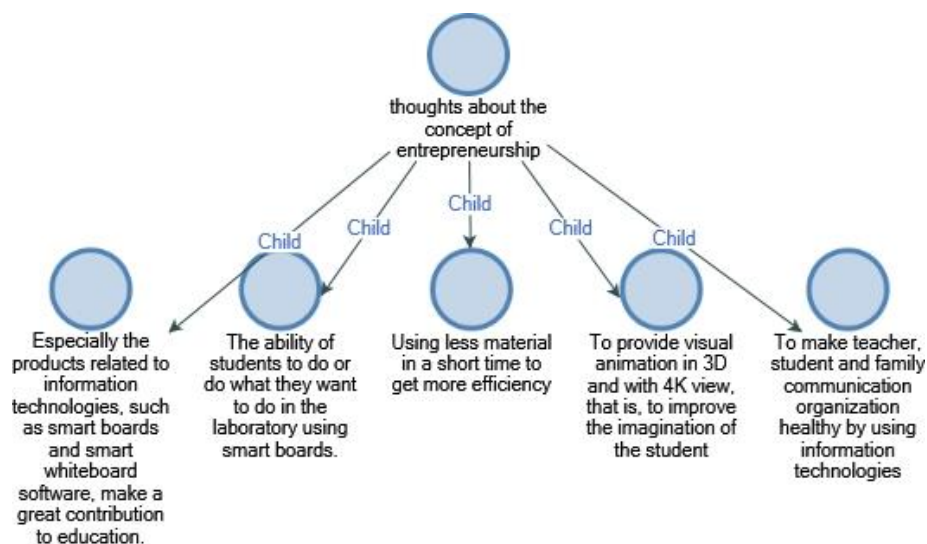
<i><b>THEME</b></i>	<i><b>TEACHERS</b></i>	<i><b>MANAGERS</b></i>	<i><b>STAKEHOLDERS</b></i>
The students of our age can closely deal with technology and adapt to the newly developed system in a short time.	12	9	4
If they adapt easily, their level of success increases.	3	8	7
Almost most students have a smart phone, laptop or desktop computer in their home.	10	8	14

12 teachers said that, the students of our age can closely deal with technology and adapt to the newly developed system in a short time.3 teachers claimed that, if they adapt easily, their level of success increases.10 teachers indicated, almost most students have a smart phone, laptop or desktop computer in their home.9 managers said that, the students of our age can closely deal with technology and adapt to the newly developed system in a short time.8 managers claimed that, if they adapt easily, their level of success increases.8 managers indicated, almost most students have a smart phone, laptop or desktop computer in their home.4 stakeholders said that, the students of our age can closely deal with technology and adapt to the newly developed system in a short time.7 stakeholders claimed that, if they adapt easily, their level of success increases.14 stakeholders indicated, almost most students have a smart phone, laptop or desktop computer in their home. According to this table, school need to be more online because when they do it from, they will feel more relax and be more successful.

*(T3) said that; “I believe that success rates will increase as students adapt to the new system.”*

*(M8) said that; “There are smart devices such as laptops and Ipads in almost all homes today. Therefore, all students can easily adapt to the new system and participate in the lessons.”*

*(S4) said that; “Since our age is a technological age, students can easily adapt.”*



**Figure 20:** Theme and Sub-Themes Distribution Map (Maps Project) Nvivo 12  
thoughts about the concept of entrepreneurship

**Table 10:***Thoughts About The Concept Of Entrepreneurship*

<i>THEME</i>	<i>TEACHERS</i>	<i>MANAGERS</i>	<i>STAKEHOLDERS</i>
Especially the products related to information technologies, such as smart boards and smart whiteboard software, make a great contribution to education.	6	3	9
The ability of students to do or do what they want to do in the laboratory using smart boards.	6	6	5
To provide visual animation in 3D and with 4K view, that is, to improve the imagination of the student	3	5	5
To make teacher, student and family communication organization healthy by using information technologies	5	7	3
Using less material in a short time to get more efficiency	5	4	3

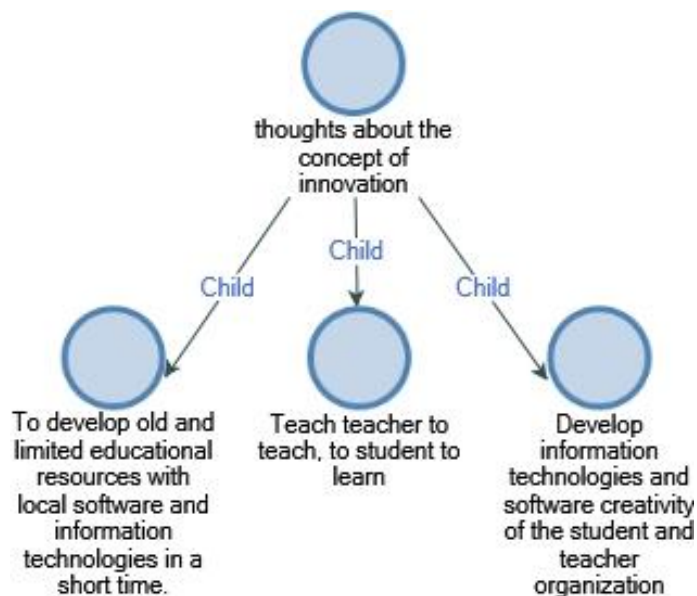
In the 8th question, we asked the participants to express their thoughts about the concept of entrepreneurship, and the answer given is as follows; 6 teachers said that, especially the products related to information technologies, such as smart boards and smart whiteboard software, make a great contribution to education.6 teachers

claimed that, the ability of students to do or do what they want to do in the laboratory using smart boards.3 teachers specified that, to provide visual animation in 3D and with 4K view, that is, to improve the imagination of the student.5 teachers indicated, to make teacher, student and family communication organization healthy by using information technologies. In addition to this, 5 teachers said that, using less material in a short time to get more efficiency.3 managers said that, especially the products related to information technologies, such as smart boards and smart whiteboard software, make a great contribution to education.6 managers claimed that, the ability of students to do or do what they want to do in the laboratory using smart boards.5 managers specified that, to provide visual animation in 3D and with 4K view, that is, to improve the imagination of the student.7 managers indicated, to make teacher, student and family communication organization healthy by using information technologies. In addition to this, 4 managers said that, using less material in a short time to get more efficiency.9 stakeholders said that, especially the products related to information technologies, such as smart boards and smart whiteboard software, make a great contribution to education.5 stakeholders claimed that, the ability of students to do or do what they want to do in the laboratory using smart boards.5 stakeholders specified that, to provide visual animation in 3D and with 4K view, that is, to improve the imagination of the student.3 stakeholders indicated, to make teacher, student and family communication organization healthy by using information technologies. In addition to this, 3 stakeholders said that, using less material in a short time to get more efficiency. According to this table, schools need to provide technology in education because students be more creative and they develop their imagination.

***(T3) said that; “4K and 3D visuals in the lessons provide the student's imagination development.”***

***(M7) said that; “I think that communication of family, teacher and student in information technologies ensures healthy education.”***

***(S5) said that; “The technology used in the new education system offers the opportunity to do something desired in the laboratory environment, thanks to smart boards.”***



**Figure 21:** Theme and Sub-Themes Distribution Map (Maps Project) Nvivo 12  
thoughts about the concept of innovation

**Table 11:**

*Thoughts About The Concept Of Innovation*

<b><i>THEME</i></b>	<b><i>TEACHERS</i></b>	<b><i>MANAGERS</i></b>	<b><i>STAKEHOLDERS</i></b>
To develop old and limited educational resources with local software and information technologies in a short time.	12	5	5
Develop information technologies and software creativity of the student and teacher organization	3	8	5
Teach teacher to teach, to student to learn	10	12	15

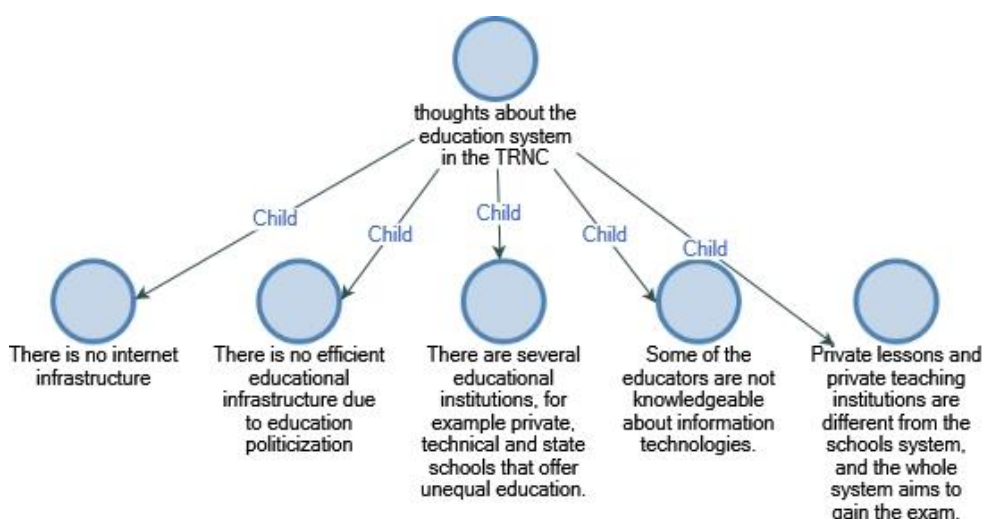
In this question, we asked our participants about their thoughts on the concept of innovation. 12 teachers said that, to develop old and limited educational resources with local software and information technologies in a short time. 3 teachers

claimed that, develop information technologies and software creativity of the student and teacher organization. In addition to these, 10 teachers specified that, teach teacher to teach, to student to learn. 5 managers said that, to develop old and limited educational resources with local software and information technologies in a short time. 8 managers claimed that; develop information technologies and software creativity of the student and teacher organization. In addition to these, 12 managers specified that, teach teacher to teach, to student to learn. 5 stakeholders said that, to develop old and limited educational resources with local software and information technologies in a short time. 5 stakeholder claimed that; develop information technologies and software creativity of the student and teacher organization. In addition to these, 15 stakeholders specified that, teach teacher to teach, to student to learn. According to this table, technology is updating day to day so schools need to update too.

*(T12) said that; “Educational software and technology a lot is being developed in education.”*

*(M8) said that; “Student and teacher work in harmony increases success in education.”*

*(S15) said that; “Technology teacher in education teaches students to learn.”*



**Figure 22:** *Theme and Sub-Themes Distribution Map (Maps Project) Nvivo 12*  
*thoughts about the education system in the TRNC*



**Table 12:***Thoughts About The Education System In The TRNC*

<i>THEME</i>	<i>TEACHERS</i>	<i>MANAGERS</i>	<i>STAKEHOLDERS</i>
There is no efficient educational infrastructure due to education politicization	3	5	7
There is no internet infrastructure	5	5	7
Some of the educators are not knowledgeable about information technologies.	10	3	6
Private lessons and private teaching institutions are different from the schools system, and the whole system aims to gain the exam.	2	5	3
There are several educational institutions, for example private, technical and state schools that offer unequal education.	5	7	2

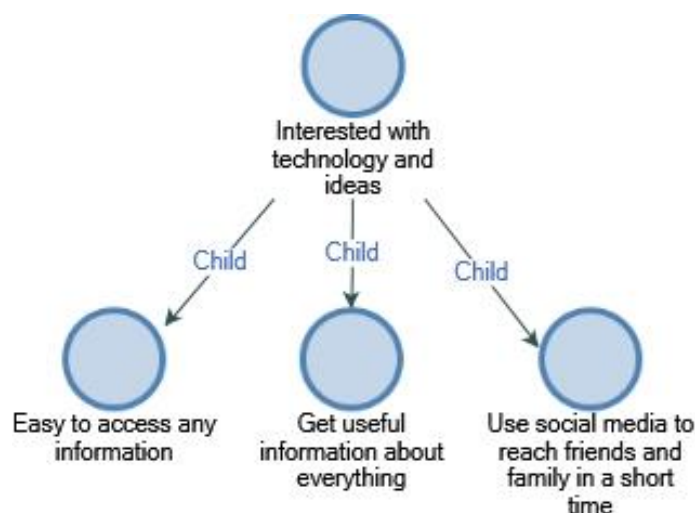
In this question of the survey, we asked their opinions about the education system in TRNC. 3 teachers said that, there is no efficient educational infrastructure due to education politicization. 5 teachers claimed that, there is no internet infrastructure. 10 teachers indicated that, some of the educators are not knowledgeable about information technologies. 2 teachers said that, private lessons and private teaching institutions are different from the schools system, and the whole system aims to gain the exam. In addition to this, 5 teachers said that, there are several educational institutions, for example private, technical and state schools that offer unequal education. 5 managers said that, there is no efficient educational infrastructure due to education politicization. 5 managers claimed that, there is no internet infrastructure. 3 managers indicated that, some of the educators are not knowledgeable about information technologies. 5 managers said that, private lessons

and private teaching institutions are different from the schools system, and the whole system aims to gain the exam. In addition to this, 7 managers said that, there are several educational institutions, for example private, technical and state schools that offer unequal education. 7 stakeholders said that, there is no efficient educational infrastructure due to education politicization. 7 stakeholders claimed that, there is no internet infrastructure. 6 stakeholders indicated that, some of the educators are not knowledgeable about information technologies. 3 stakeholders said that, private lessons and private teaching institutions are different from the schools system, and the whole system aims to gain the exam. In addition to this, 2 stakeholders said that, there are several educational institutions, for example private, technical and state schools that offer unequal education. According to this table, they need more development about combination of technology and education.

*(T2) said that; “The system in private and public schools is different, and it makes students only aim to win exams.”*

*(M8) said that; “some educational institutions offer different education in different schools, for example private, government or technical.”*

*(S7) said that; “Unfortunately, I think that there is not enough internet infrastructure in the education system.”*



**Figure 23:** Theme and Sub-Themes Distribution Map (Maps Project) Nvivo 12

Interested with technology and ideas

**Table 13:***Interested with technology and ideas*

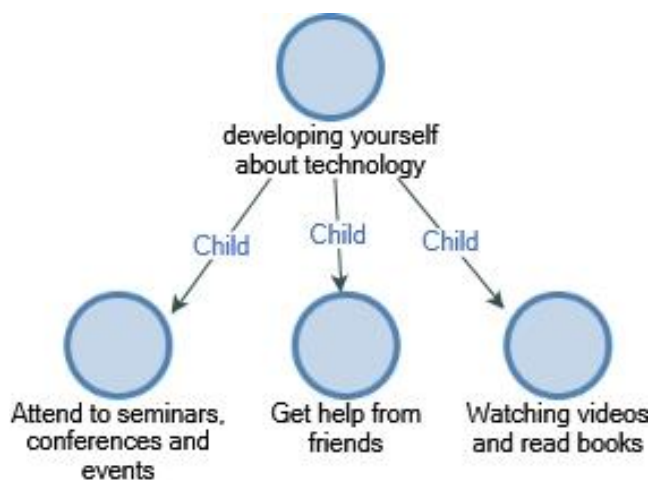
<i><b>THEME</b></i>	<i><b>TEACHERS</b></i>	<i><b>MANAGERS</b></i>	<i><b>STAKEHOLDERS</b></i>
Easy to access any information	3	9	8
Get useful information about everything	10	6	8
Use social media to reach friends and family in a short time	12	10	9

This table illustrates that, participants are interested with technology. 3 teachers said that, easy to access any information. 10 teachers claimed that, get useful information about everything. Furthermore, 12 teachers specified, use social media to reach friends and family in a short time. 9 managers said that, easy to access any information. 6 managers claimed that, get useful information about everything. Furthermore, 10 managers specified, use social media to reach friends and family in a short time. 8 stakeholders said that, easy to access any information. 8 stakeholders claimed that, get useful information about everything. Furthermore, 9 stakeholders specified, use social media to reach friends and family in a short time. According to this table technology is taking a big part in human life, so everyone needs to use it.

*(T3) said that; “Technology is the part of our life and it is good to easy to access any information about you want.”*

*(M6) said that; “Technology is indispensable for humanity, people can get useful information by using technology such as Google.”*

*(S9) said that; “Most of the people are using social media to reach friends and family members in a short time also they can read news from their social media accounts.”*



**Figure 24:** Theme and Sub-Themes Distribution Map (Maps Project) Nvivo 12  
developing yourself about technology

**Table 14:**

*Developing Yourself About Technology*

<i>THEME</i>	<i>TEACHERS</i>	<i>MANAGERS</i>	<i>STAKEHOLDERS</i>
Attend to seminars, conferences and events	12	10	7
Get help from friends	1	9	7
Watching videos and read books	12	6	11

In table 14, 12 teacher said that, attend to seminars, conferences and events.1 teacher specified that, get help from friends. In addition to these, 12 teachers indicated watching videos and read books.10 managers said that, attend to seminars, conferences and events.9 managers specified that, get help from friends. In addition to these, 6 managers indicated watching videos and read books.7 stakeholders said that, attend to seminars, conferences and events.7 stakeholders specified that, get help from friends. In addition to these, 11 stakeholders indicated watching videos and read books. According to this table, nowadays people doing shopping, paying

bills online so technology make human life easier so everyone needs to learn how to use it.

*(T1) said that; “I want help from my friends to learn how I can use technology by this way I can develop myself.”*

*(M10) said that; “We are attending to seminars, conferences and events about technology. In addition to this when we attend to these events we can say that out technology skills are getting better day to day.”*

*(S11) said that; “I think that the best way is watching videos or read books about technology so in this way everyone can develop themselves about it.”*



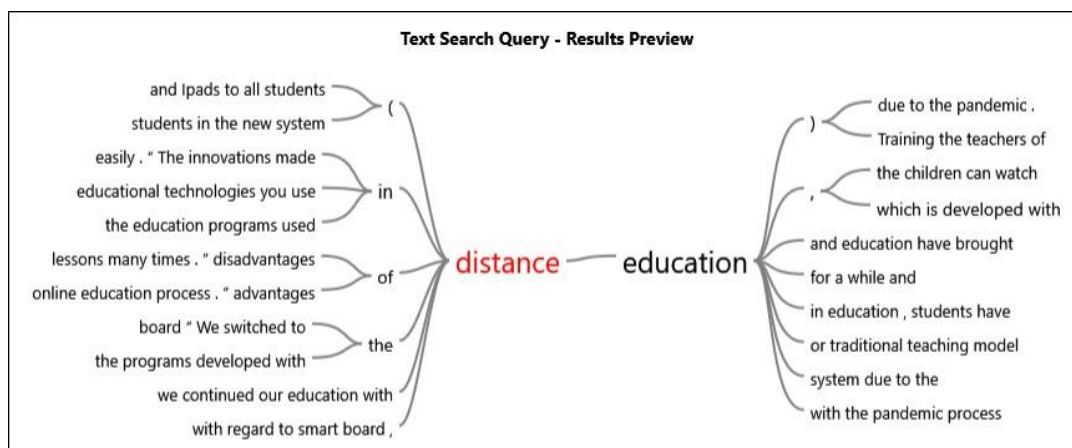
**Table 15.**

*Word frequency analysis data*

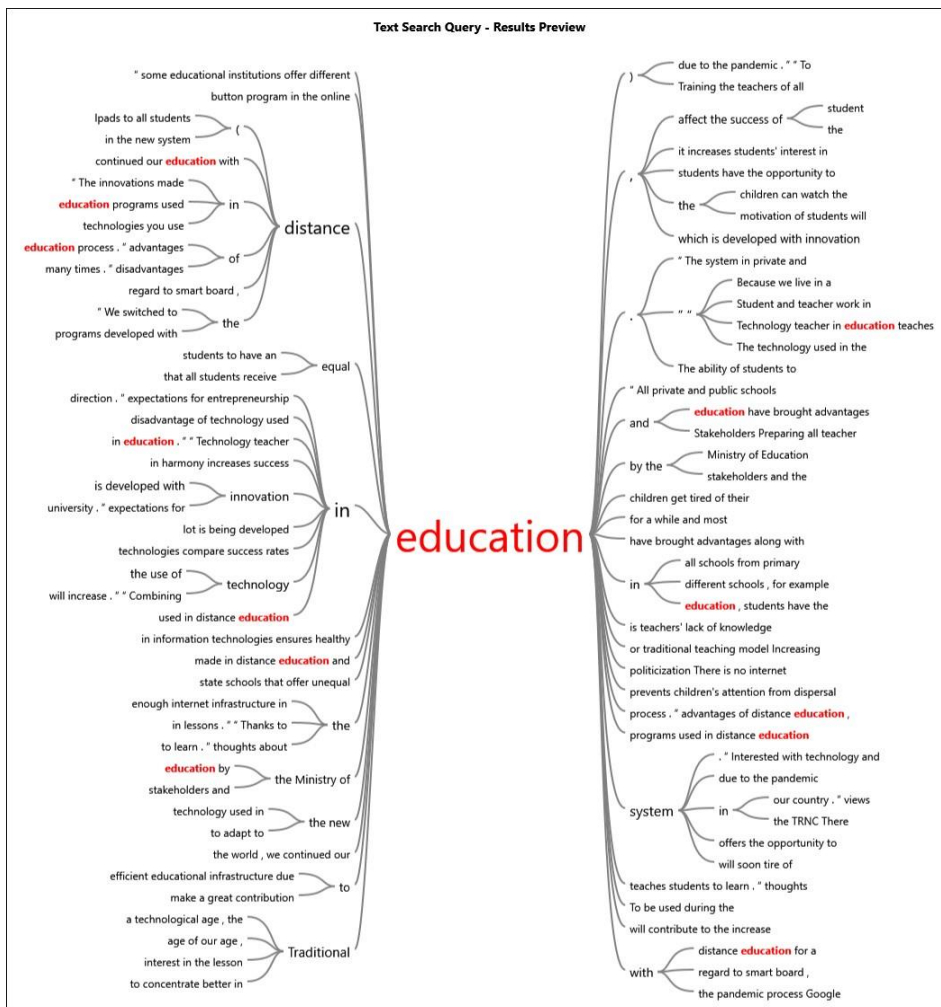
<b>Word</b>	<b>n</b>	<b>(%)</b>	<b>Word</b>	<b>n</b>	<b>(%)</b>
education	85	001	new	24	001
students	81	001	short	22	001
teachers	72	001	success	22	001
stakeholders	51	001	teacher	22	001
managers	48	001	time	22	001
technologies	44	001	distance	20	001
information	43	001	due	20	001
lessons	41	001	adapt	18	001
system	40	001	easily	18	001
educational	37	001	get	18	001
technology	35	001	technological	16	001
schools	31	001	age	15	001
claimed	30	001	infrastructure	15	001
smart	29	001	interest	15	001
specified	27	001	used	15	001
private	26	001	according	14	001
addition	25	001	boards	14	001
student	25	001	increase	14	001
children	24	001	software	14	001
using	23	001	use	14	001

According to the word cloud analysis results of the NVivo 12 Plus program, the most frequently used words (words up to 001% from all general percentages with words are shown in the above figure). In connection with the purpose of our research, the most frequently used words are "education, students, teachers, stakeholders, managers, Technologies, information, lessons, system, educational, technology, schools." According to the results obtained from these findings, it can be evaluated that the word cloud sufficient to identify the problems and problems

experienced has been reached. In order to make a more in-depth analysis, we have deepened our analysis in order to reveal the problem situation for the research qualitative research questions, as can be seen in the following findings, to emphasize what might be meaningful.

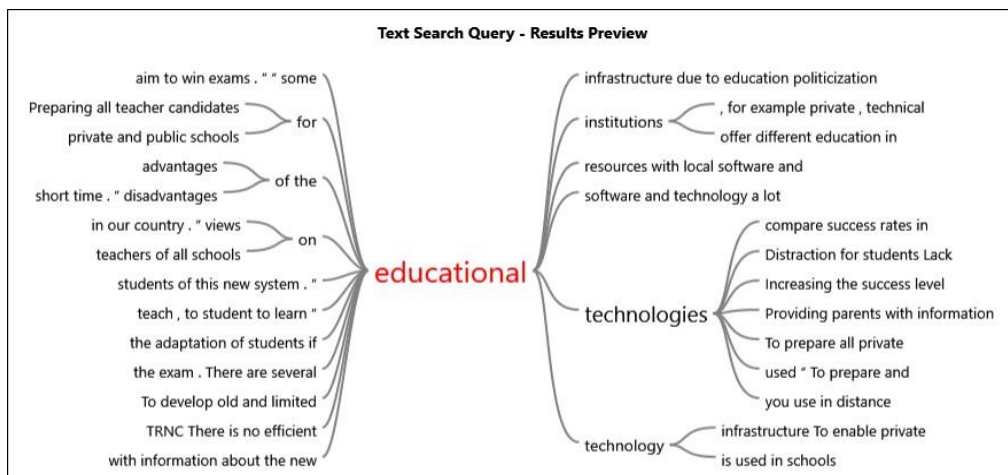


When we discussed word analysis, and in our research on distance, smart learning was given in schools for a while due to the pandemic, which increased the success of the students in this method.

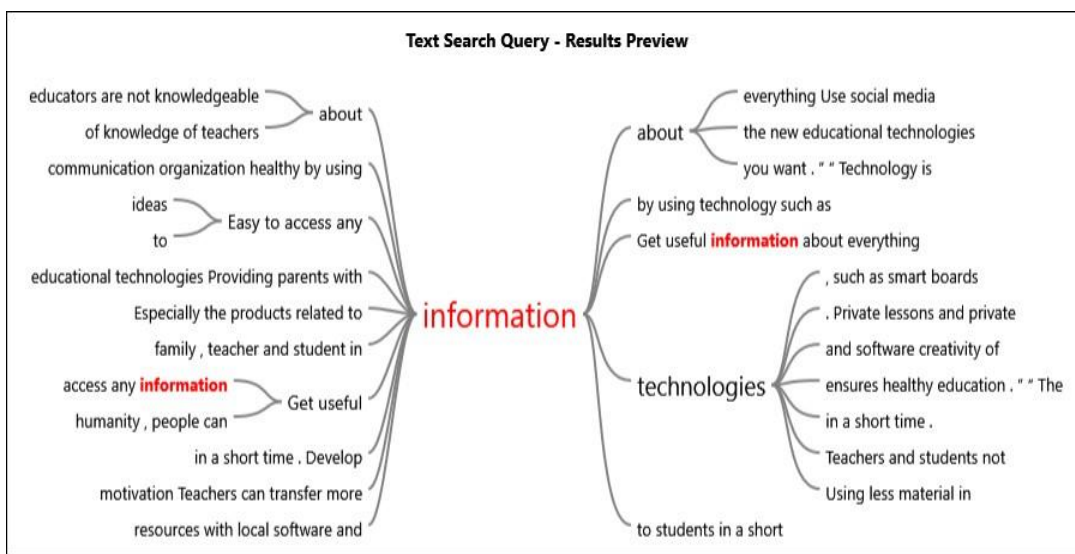


When we consider word analysis, it has been observed in our research that we have conducted education on education that equal education is not given in private, state and technical schools.

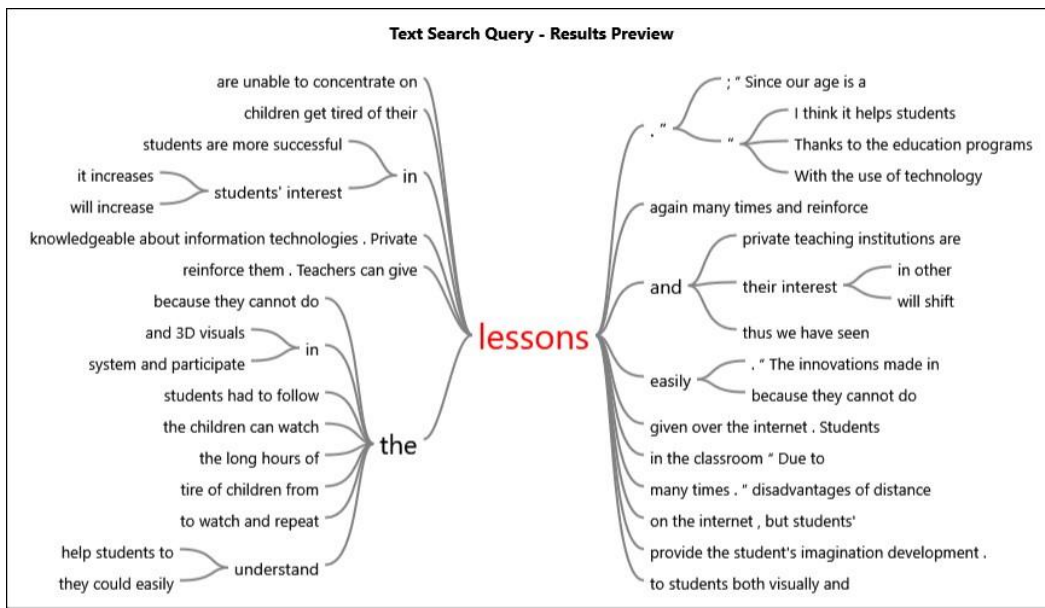




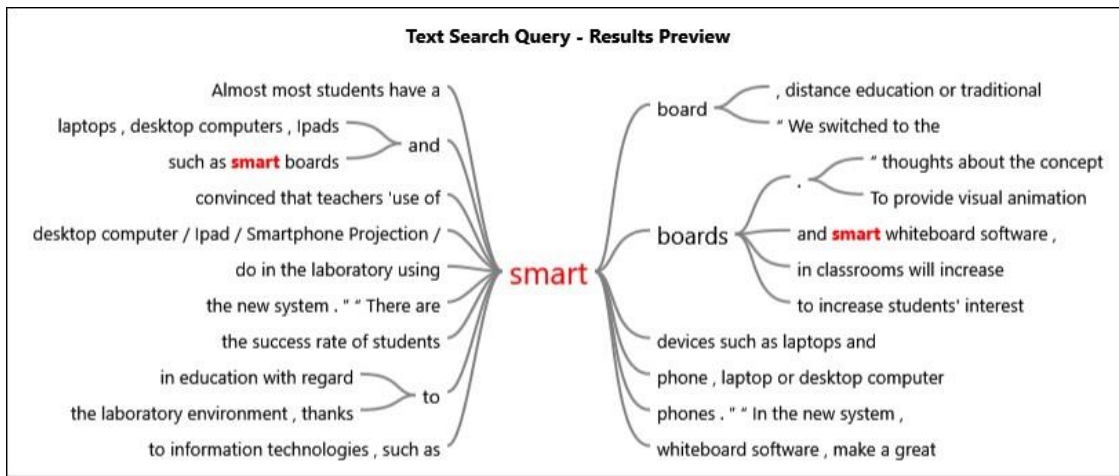
When we discussed word analysis, it was concluded that our research, in our research on education, is more educational than the traditional education system about using smart boards in classrooms.



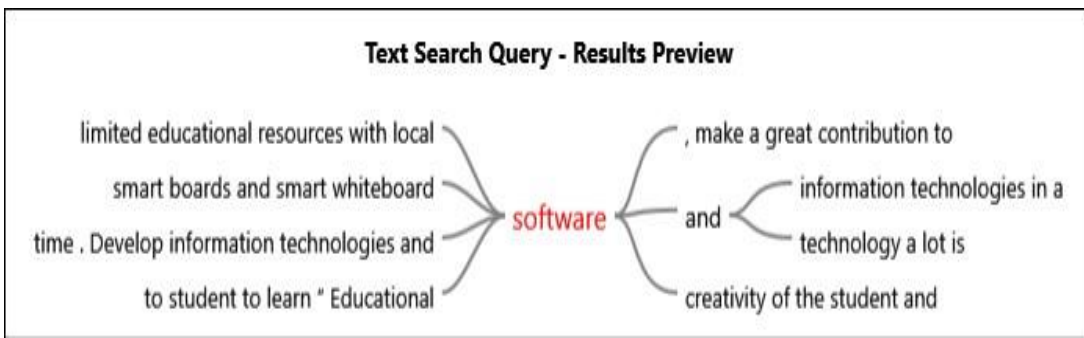
When we discussed word analysis, it was understood in our research about information that if a smart board is used in classrooms, students can access the information they want in a short time due to the internet.



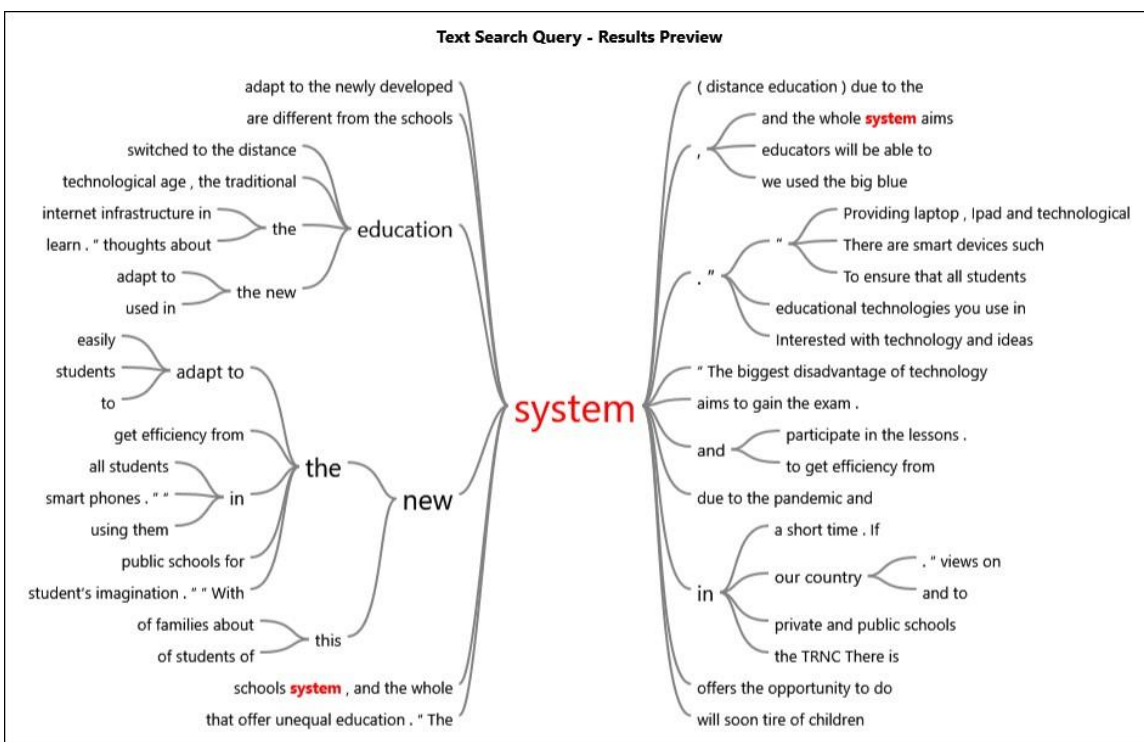
When we discussed word analysis, our research also negatively affected the students of the lessons that could not be done in classrooms due to the pandemic in terms of concentration.



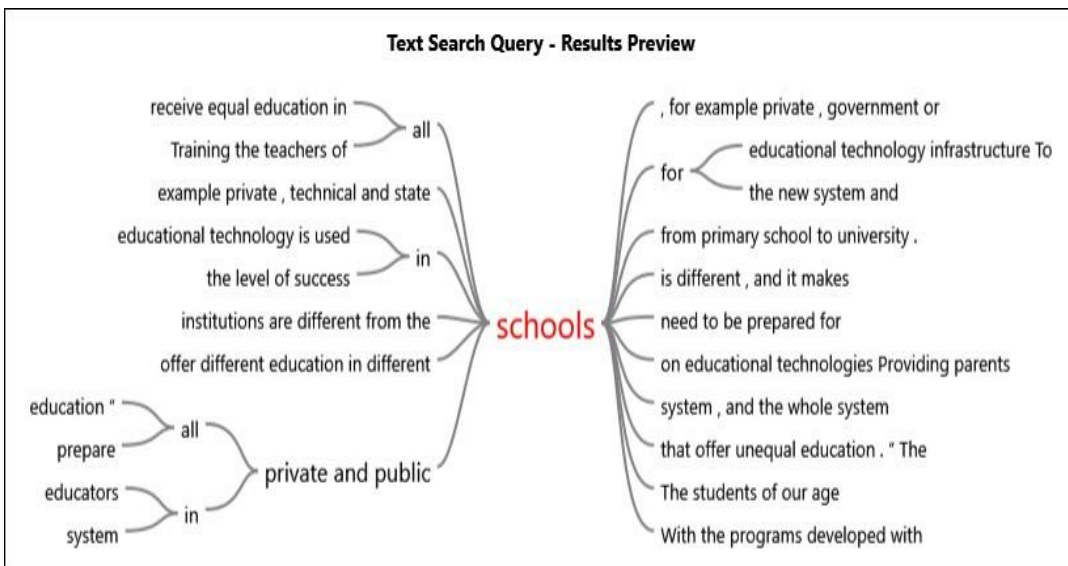
When we discussed word analysis and in our research on lessons, training continued for a while due to the pandemic, and during this period, Ipad, phone or laptop were used. This system has been used in education systems in many countries in recent years.



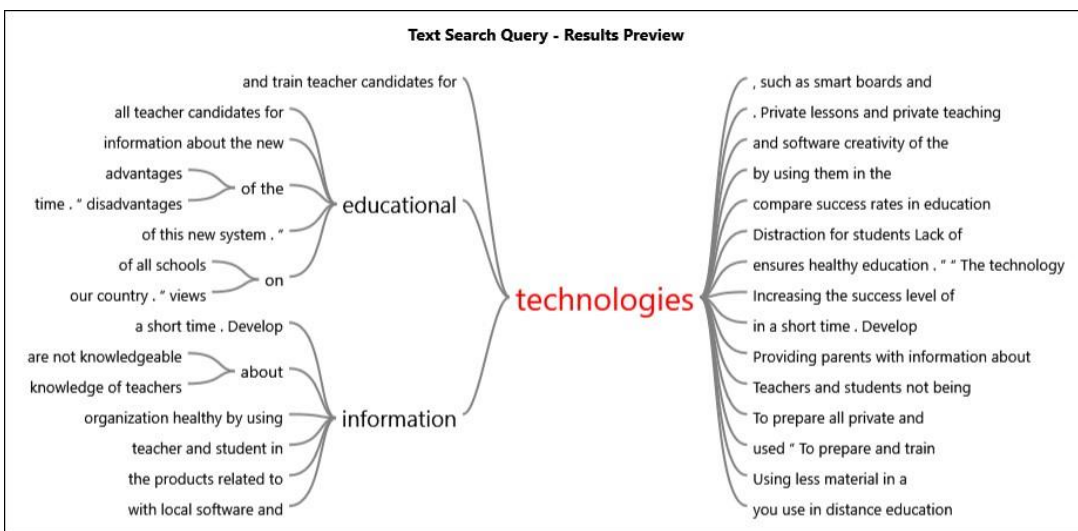
When we consider word analysis, our research is that in our research on lessons, several companies in our country have developed educational programs and this program will be successful as a result of using this program in the education system of our country.



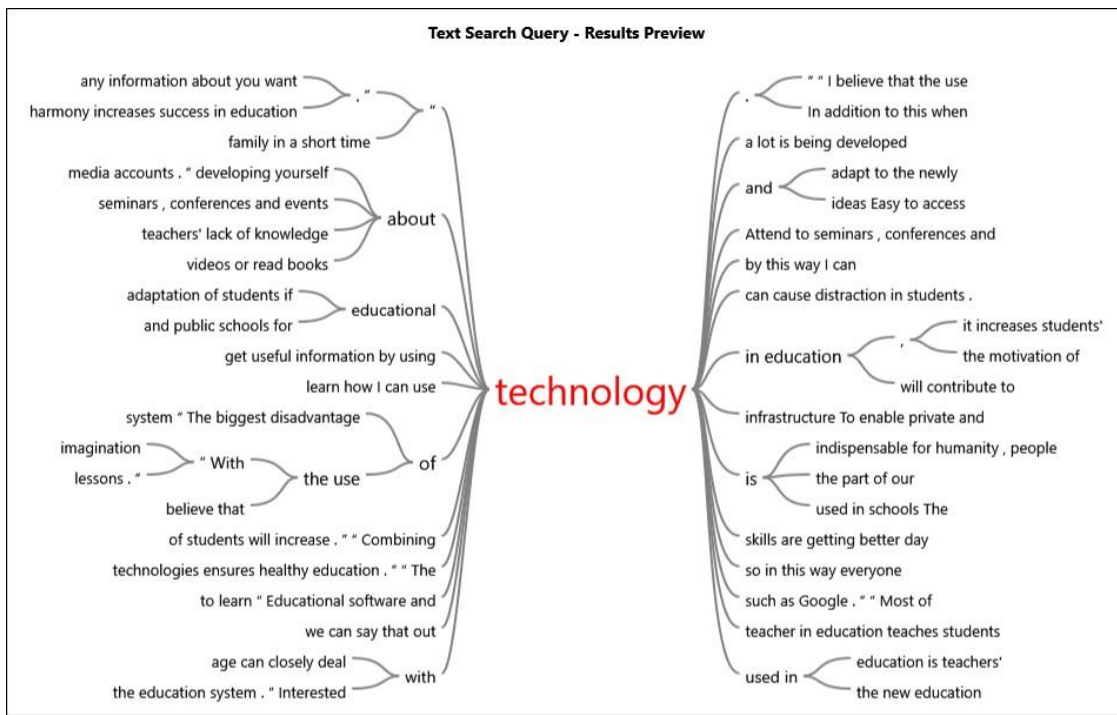
When we discussed word analysis, a study was conducted on the education system in our country in our research on lessons, and as a result of this research, many changes were required in the education sector.



When we consider word analysis and our research on lessons, when we look at the education system in our country, it is of the opinion that many investments need to be made in both private and primary schools from primary school to university, and it is thought to combine technology with education.



When we consider word analysis and our research on lessons, when we look at the education system in our country, technology and education should be an interdisciplinary education, besides, educators should be educated on this subject.



When we consider word analysis and our research on lessons, when we look at the education system in our country, technology and education should be an interdisciplinary education, besides, educators should be educated on this subject.

## CHAPTER V

### Discussion

In this part of the thesis is discussing about the findings and similar case studies as done before. On the other hand, in this section will be compare similar case studies findings and in this thesis`s findings will be compared.

Firstly, the findings will illustrate about done cases before. In the case of Examining Creativity of Students through Smart Board in Learning Mathematics was comparing about the students and teachers need possibilities that ease teaching and learning process. Electronic instruments such as computer, software, and smart instruments will increase abilities for students. The purpose of this study is to examine the creativity level of high school students in the learning environment using smart board and compare it to traditional environment. The findings of the case was traditional education is limited with teacher, curriculum and class test however; when education and technology is combined, it will be more efficient. Interactive smart boards incorporate to teach so that every student will have an opportunity to grasp the essential information for his education. It encourages students to embrace technology in their learning. This not only benefits the student in the short term providing access to a wider base of knowledge, but it also helps them to stay on the cutting edge of technology as the years progress so they may learn the essential skills to take a viable role in the future workplace. Using electronic educational environment and smart board, teacher could use multimedia educational materials such as film, picture, slide and educational software in planning lessons; teaching-learning process and evaluation to enhance quality and durability of education while in traditional learning environment lesson plans include instructions, curriculum and class tests and confine to teacher.

In this research when we look at the table 1, it is showing that these two study are similar because in table 1 shows that smart board using in classes are increasing student`s success level. Teachers, students and stakeholders are supporting this new system. Most of the public and private schools are using interactive smart boards, projections in class. Especially teachers have specified that students can understand easily and motivate to their lessons.

On the other hand, in the case of Effects of Using Smart Board on Primary School Students to Permanence, Attitudes to Maths Achievements. In this case study was aiming to research about using smart boards in Mathematics session for 6<sup>th</sup> grade. In these study effects of usage of smart board on primary school 6th grade Maths students` achievement, attitudes to Maths, effects of permanence have been examined. In the experiment study pre-tests and post tests were distributed and a control group was established. The subject “Geometric Concepts and Angels” has been taught directly explained using explanatory method to control group, and it has been taught using Smart board. Obtained data have been appraised using statistical programme. The results are quite remarkable and findings are very supportive to use an interactive board at school. In another hand, the result of this case is the general result is that while the smart board could not match the objects and photographs with the target words, at the end of the method, students' success was 85.2% from object to word and 88.9% from word to object.

In table 10 shows that, when teachers use 4K and 3D technology in class, student’s creativity has increased. Because when teachers are using visual thing in their lessons students will be more motivated and adapted to sessions. In addition to this, as it known, humanity is living in technological age so currents children are born into technology so they know how to use computers so by using this technic attract them to attend class and be more successful.

The last case study is The Using of Active Board at Secondary School Geography Lessons. The teacher, textbook, and board, as in many disciplines, are has formed the basic components of a geography education for years. But advances in science and technology, technology today, education as in every field of life to make its presence felt in the field, classical perspectives and learning started to differentiate his techniques. "Today people, knowledge and the change in its relations with the society have also changed its characteristics. The phenomenon of information explosion has changed the function of knowledge in human and social life and the methods of production and acquisition” (Alkan 2005: 3-5). As in many other fields, the materials used in geography education for both teachers and students and the unique learning opportunities offered by these materials have brought a different dimension to learning. In our developing and changing world, the place and

importance of teaching tools and materials in the efforts of our teachers to use learning environments effectively and raise individuals of the 21st century is an undeniable fact (Şahin and Yıldırım, 1999: 1). As a result of changes and developments in science and technology,

It is expected that more qualified students are expected to be trained in education, and educators must make learning environments more effective in order to raise such students. It is inevitable to benefit from teaching tools and materials in order to create an effective teaching environment (Kazu and Yeşilyurt, 2008: 177). Many disciplines benefit from these developments in their own way. As a whole, considering its field, interests, purpose, methods and tools and equipment, it is seen that geography has benefited more from the developments in the field of computers and internet than other disciplines (Sui & Bednarz, 1999). Internet in geography lessons where visualise is extremely important; It enables visuals in the form of maps, tables and graphics to be obtained very easily. In order to reflect the modern geography in the classroom with its current level, the whole earth or a part of it, various information should be transferred to the classroom whenever required (Demirci, 2008).

The findings of this case are although technological developments have some problems. Although it is known that these technologies are known to be brought about, it has become a necessity to use these technologies in the field of education in our age. Today, in some countries led by developed countries, many different technological tools are tried and used in the field of education. Smart board systems, which combine all the opportunities, provided by computers, projectors, smart screens and internet, among these technological tools, are becoming more and more common in the field of education. Geography science is one of the branches of education that is most suitable for taking advantage of the opportunities offered by smart board systems in terms of areas of interest and scope. The use of smart board systems in geography lessons, in this study, which aims to evaluate with its aspects, many results have been achieved that will contribute to our savings. Firstly use of smart boards in geography lessons in limited lesson time enabling subjects to be processed much faster and more efficiently has been shown to provide. Especially in the 9th grades based on this study in the applied geography curriculum and in the



curriculum, the more important this is given the limited time will be understood. Teachers' time for a good presentation in the use of smart boards and considering that he / she has to plan the topics to be covered in advance. At the same time, your lessons will be more planned and organized. It can be said that it results in processing. What was covered in the last lesson, thanks to the recording feature on the board, it is possible to summarize the topics quickly, especially before the exams, and the students can easily carry the topics to the computers at home with portable memories, thanks to the smart board systems. What teachers encounter in terms of geography lessons. The biggest problem is that students' interest and motivation is insufficient. But thanks to smart board systems, internet resources, photos, flash animations that can be used, videos, documentaries and power point presentations can directly affect their interests. In addition to making it easy to control, it can be easily, it also provides access. If all these benefits are considered, it is obvious that smart board systems provide many benefits beyond classical lesson processing methods. Today, studies on geography education in developed countries reveal that lessons are taught with smart board systems in many classes of schools in these countries, or at least in some classes. It is known that there are some studies especially in big cities to make use of this technology in the field of education in our country, which adapts very quickly to technological developments. However, considering the country in general, it can be said that the use of these systems in schools is insufficient in our country where the young population is high. The costs of smart board systems consisting of a computer, a projector and a smart board panel are already quite high for our country. Government support is required for these systems, which are spreading rapidly in many private schools today, to become widespread in public schools. On the other hand, those who are studying at our universities teacher candidates have a sufficient knowledge of smart board systems. Training is also an important step that can be taken. Substantially, our universities are about smart board systems, as soon as possible, students who are teacher candidates and our teachers who teach in different parts of our country should be equipped with a level that can provide certification on this subject. This is very important in terms of closely following the rapidly developing education trends in the world.

In table 5 illustrated that teachers are needed to get training about technology because various of teachers do not have any idea about how to use technology so if schools use technology in their education ,all teachers have to learn technology such as; laptop, interactive smart boards. Moreover they made online / distance learning for a while due coronavirus. So they have to get education about technology

When look at the case studies which are done before and this thesis has common point. Three case studies and this research show that technology and education should be combined. Because other case studies researchers found that when they started to use technology in education system student`s success level have increased, also teachers became more efficient over students. For example, in table 1 proof that; if technology will be using at school, students are more successful.

In addition to this, second common point is with other case studies are teachers had to get education about how to use technology in education. Because few participants specified that if teachers do not know how to combine them technology is not going to be efficient over students.

## CHAPTER VI

### Conclusion and Recommendations

#### Conclusion

The name of this thesis is assessment of teacher and stakeholder views of educational technologies in terms of entrepreneurship and innovation with the pandemic process. Firstly; last decade technology and education intertwined, this means technology is improving day to day and this brings innovation to the education. In addition to this, education sector is improving by technology; for example; smart education or online education is the part of the new technology. With using technology in education strive to reduce local education gaps and support the nurturing of creative talents by providing a smart educational environment driven by the last IT technology. In this thesis included innovation and entrepreneurship in education system, smart boards and communication. Also thesis research method has used qualitative research method. In this research has used 75 participants they were teachers, managers and stakeholders such as who sells IT items, education software and etc.

#### Recommendations

In this thesis researcher made survey to participants and findings mentioned above. In addition to this participants have shared about their ideas and recommendations about education and technology. The researcher will show the recommendation below;

\* Teachers can give lessons to students both visually and with video narration and help students to understand the lessons easily.

\* It increases productivity in teaching.

\*Students can make everything in smart boards rather than use laboratory.

\*Students can revise as make as possible.

\*Teachers and students will be more efficient and will increase success level.

\*Students will get higher score in exams.

In this research has explored that, if in Cyprus, internet infrastructure, education system and as known, most of the countries started to online education due to coronavirus so this new system can be applied to Cyprus. This thesis is an experiment carried out on secondary schools in the Turkish Republic of Northern Cyprus. This research can be done from primary school to university, as a recommendation to future researchers. On the other hand, due to the pandemic, it was not possible to enter the classes and observe them. In the researches to be made after that, it can be entered and observed in the classes and more realistic results can be obtained. In addition to these, this research was conducted only on teachers, administrators and stakeholders. After that, students and parents can be added to the research so that a more comprehensive research can be done and more detailed results can be obtained. In this study, the research was conducted between 15 and 30 days, further research may take longer and more information can be collected. This research was conducted qualitatively and the questions were answered in the form of an interview. It can be done quantitatively in subsequent research and the results can be disseminated statistically, furthermore, researchers can go to schools as observers and compare the success levels of students in classrooms with and without smart boards. On the other hand, comparisons can be made in private and public schools in this research. Comparison of equality in education and education provided to students can be made.

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## ANNEXES

**Appendix 1**

1) Your Gender;

FEMALE ( )      MALE ( )

2) Please Choose Your Age:

- a. 25-30( )      b) 31-35 ( )      c) 6-40 ( )      d) 41-45 ( )  
 e) 46+ ( )

3) Your Educational Status:

- a. University  
 b. Master  
 c. PhD

4) How Many Years Have You Been Teacher?

- a. 1-5 years b) 6-10 years c) 11-16 years d) 17-23 years e) 24+

5) How Many Years Have You Been Working As A Manager?

- a. 1-5 years b) 6-10 years c) 11-16 years d) 17-23 years e) 24+

6) How Many Years Have You Been Working As A Manager?

- a. 1-5 years b) 6-10 years c) 11-16 years d) 17-23 years e) 24+

7) Are you interested in technology and what do you think about Technology?

8) Do you develop yourself about technology? What do you think about it?

9) What Are The Advantages And Disadvantages Of The Educational Technologies You Use?

- 10) What Are Your Views On Educational Technologies Compare Success Rates In Education With Regard To The Smart Board, Smart Learning Or Traditional Teaching Model.
- 11) What Are Your Expectations For Entrepreneurship In Education By The Ministry Of Stakeholder And Education?
- 12) What Are Your Expectations For Innovation In Education By The Ministry Of Stakeholder And Education?
- 13) What Are The Educational Technologies You Use In Online Learning Education With The Pandemic Process?
- 14) How Does Smart Learning, Which Has Been Developed With Innovation In Education, Affect Student Success? Please Write Down As Advantages And Disadvantages
- 15) What Are Your Opinions About The Adaptation Of Students If Educational Technology Is Used In Schools?
- 16) Please Briefly Describe Your Thoughts On The Concept Of Entrepreneurship.
- 17) Please Briefly Describe Your Thoughts On The Concept Of Innovation.
- 18) What Are Your Thoughts On The Education System In The Turkish Republic Of North Cyprus?

## Appendix 2



28.09.2020

Sayın Nazife Kayalar

Bilimsel Araştırmalar Etik Kurulu'na yapmış olduğunuz YDÜ/EB/2020/436 proje numaralı ve "Eğitim teknolojilerinin öğretmen ve paydaş görüşlerinin girişimcilik ve pandemik süreçinde yenilikçilik açısından değerlendirilmesi" başlıklı proje önerisi kurulumuzca değerlendirilmiş olup, etik olarak uygun bulunmuştur. Bu yazı ile birlikte, başvuru formunuzda belirttiğiniz bilgilerin dışına çıkmamak suretiyle araştırmaya başlayabilirsiniz.

Doçent Doktor Direnç Kanol

Bilimsel Araştırmalar Etik Kurulu Raportörü

A handwritten signature in black ink, reading "Direnç Kanol".

**Not:** Eğer bir kuruma resmi bir kabul yazısı sunmak istiyorsanız, Yakın Doğu Üniversitesi Bilimsel Araştırmalar Etik Kurulu'na bu yazı ile başvurup, kurulun başkanının imzasını taşıyan resmi bir yazı temin edebilirsiniz.

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## TURNITIN REPORT

## NAZIFE KAYALAR THESIS

## ORJİNALLİK RAPORU

<b>%9</b>	<b>%7</b>	<b>%5</b>	<b>%5</b>
BENZERLİK ENDEKSİ	İNTERNET KAYNAKLARI	YAYINLAR	ÖĞRENCİ ÖDEVLERİ

## BİRİNCİL KAYNAKLAR

<b>1</b>	<b>dergipark.org.tr</b> İnternet Kaynağı	<b>%2</b>
<b>2</b>	<b>www.ispacs.com</b> İnternet Kaynağı	<b>%2</b>
<b>3</b>	<b>Submitted to Hellenic Open University</b> Öğrenci Ödevi	<b>%1</b>
<b>4</b>	<b>dergipark.ulakbim.gov.tr</b> İnternet Kaynağı	<b>%1</b>
<b>5</b>	<b>e-dergi.marmara.edu.tr</b> İnternet Kaynağı	<b>%1</b>
<b>6</b>	<b>Zsuzsanna K. Szabo, Emilia Herman.</b> <b>"Innovative Entrepreneurship for Economic Development in EU", Procedia Economics and Finance, 2012</b> Yayın	<b>%1</b>
<b>7</b>	<b>Submitted to Griffith College Dublin</b> Öğrenci Ödevi	<b>&lt;%1</b>
<b>8</b>	<b>dspace.marmara.edu.tr</b>	