NEAR EAST UNIVERSITY

GRADUATE SCHOOL OF EDUCATIONAL SCIENCE

DEPARTMENT OF COMPUTER EDUCATION AND INSTRUCTIONAL TECHNOLOGY

DIGITAL CHILD RIGHTS: A TURKISH REPUBLIC OF NORTHERN CYPRUS VIEWPOINT

PhD THESIS

MUHAMMAD BELLO NAWAILA

NICOSIA

MARCH, 2019

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Supervisor: Asst. Prof. Sezer Kanbul

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Approval of the Graduate School of Educational Sciences

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I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

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To the Nawaila Family…

ABSTRACT

DIGITAL CHILD RIGHTS: A TURKISH REPUBLIC OF NORTHERN CYPRUS VIEWPOINT

MUHAMMAD BELLO NAWAILA

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The utilization of digital devices and technologies is an integral part of children's daily lives. Despite the multiple opportunities associated to online environment, like communication entertainment and education, it has also been associated with various risks like cyberbullying and grooming. it is therefore important to access the level of risk, mediation and digital literacy among children as they form the most vulnerable part of the society and considering that those vulnerable offline are vulnerable online makes conducting this research even more important.

This study contributes significantly to the field of digital children's rights by designing, developing and validating Turkish Digital Child Rights Scale (TDCRS) which access the level of digital literacy, online risks, online participation, parental and school mediation as well as internet access and utilization among children in TRNC. TDCRS was found to be very reliable with Cronbach's alpha 0.833.

To answer the research question data was collected from students of Near East College, age between 13 to 17 and SPSS version 20 was used to analyze the data. It was found that a significant amount of the respondents partakes in cyberbullying and sexting, children has no mediation from both parents and schools, lacks digital literacy, and 41.41% of the respondents partake in risky activities online. No formal policies to regulate online risk exist in TRNC, 60% know there rights online with no significant difference between the genders.

To solve the issue of digital literacy which will enable the children to be more resilient, DMLA_NEU was developed by the researchers. DMLA_NEU is a digital literacy mobile application that will serve as a platform for children between the age of 9 to 18 to

learn how to depend themselves online and at the same interact with other children by chatting.

Keywords: Digital Child Rights, Digital Literacy, Mobile Application, Online Risk, Scale.

ÖZET

DİJİTAL ÇOCUK HAKLARI: KUZEY KIBRIS TÜRK CUMHURİYETİ AÇISINDAN BAKIŞ

MUHAMMAD BELLO NAWAILA

Bilgisayar ve Öğretim Teknolojileri Eğitimi Doktora Programı

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Dijital cihazların ve teknolojilerin kullanılması, çocukların günlük yaşamlarının ayrılmaz bir parçasıdır. İletişim ortamı ve eğitim gibi çevrimiçi ortamların sağladığı çoklu olanaklara rağmen, siber zorbalık ve cinsel istismar gibi çeşitli risklerle de ilişkilendirilmiştir. Bu nedenle, toplumun en savunmasız bölümünü oluşturan çocuklar arasında risk, arabuluculuk ve dijital okuryazarlık seviyesine erişmek ve toplumun çevrimiçi savunmasız durumdaki kişilerine dikkat çekmek bu araştırmayı daha da önemli kılmaktadır.

Bu çalışma KKTC'deki çocuklarda dijital okuryazarlık, çevrimiçi riskler, çevrimiçi katılım, ebeveyn ve okul arabuluculuğu, internet erişimi ve kullanım seviyesine erişimi kapsayan Türk Dijital Çocuk Hakları Ölçeği (TDCRS)'ni tasarlayıp, geliştirerek ve geçerliğini test ederek dijital çocuk haklarına katkı koymaktadır. TDCRS'nin 0.833 Cronbach'ın alfa değeri ile oldukça güvenilir olduğu belirlenmiştir.

Araştırma sorusunu cevaplamak için veriler yaşları 13 – 17 arasında olan Yakın Doğu Koleji öğrencilerinden toplanmış ve verilerin incelenmesinde SPSS 20 sürümü kullanılmıştır. Araştırmadan elde edilen bulgular, araştırmaya katılanların büyük bir kısmının siber zorbalık ve cinsel içerikli mesajlaşmalarda yer aldığı, çocukların ebeveyn ve okullarda arabuluculuk olmadığı, dijital okuryazarlığın bulunmadığı ve katılımcıların %41.41'inin çevrimiçi riskli etkinliklerde yer aldığını göstermiştir. KKTC'de çevrimiçi riski düzenleyen resmi politikalar bulunmamakta olup, cinsiyetler arasında anlamlı bir fark olmaksızın katılımcıların %60'ı çevrimiçi hakları olduğunu bilmektedir.

Çocukların psikolojik olarak daha dayanaklı olmalarını sağlayacak dijital okuryazarlık sorununu çözmek için araştırmacılar tarafından DMLA_NEU geliştirilmiştir. DMLA_NEU 9 ile 18 yaş arası çocuklar için kendilerini çevrimiçi nasıl bağlayabileceklerini ve aynı zamanda diğer çocuklarla sohbet ederek etkileşime gireceklerini öğrenmek için bir platform görevi görecek bir dijital okuryazarlık mobil uygulamasıdır.

Anahtar Kelimeler: Dijital Çocuk Hakları, Dijital Okuryazarlık, Mobil Uygulama, Çevrimiçi Risk, Ölçek.

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LIST OF ABBREVIATIONS

CEIT	**:**	Computer Education and Instructional Technology
DMLA	**:**	Digital Learning Mobile Application
ICT	**:**	Information and Communication Technology
NEU	**:**	Near East University
OECD	**:**	Organization for Economic Co-operation and Development
SPSS	**:**	Software Package for Social Science
TDCRS	**:**	Turkish Digital Rights Scale
TRCN	**:**	Turkish Republic of Northern Cyprus
UNCRC	**:**	United Nations Convention for the Rights of a Child
UNICEF	**:**	United Nations International Children Emergency Fund

CHAPTER I

INTRODUCTION

Introduction

Children now-a-days spend considerable amount of time online at a young age. Estimates have shown that 26 percent of the global population is under 15 years of age ("World Population" Source: Statista.com), and is relishing in the opportunities provided by digital technologies.

Undoubtedly, Digital Technologies play a vital role in the lives of most children around the world; technological access is rapidly increasing among children and its integration is affecting their lives (Székely & Nagy, 2011) in both positive and negative ways. An estimated one in every three digital technology users worldwide is a child (Livingstone, 2016a) and every activity: educational, health, economical, governance or child protection, is being significantly changed as a result of technological penetration (Kleine et. al., 2014).

Digital Technologies provide children with levels of access to information, entertainment and communication while also providing an avenue for participation, learning and self-expression (Livingstone & Bulger, 2012; Bose & Coccaro, 2013). Digital technologies has also provided a means to publish, learn and communicate to billions of people in an exceptional way (Sanou, 2017) that was unimaginable only thirty years ago. With all these unprecedented advantages come risks; for example, digital technologies have made the creation and distribution of abusive images of children easier and have also presented new opportunities for abusers to contact children. However, various interwoven factors occurring in the lives of children can improve or deter the utilization of digital opportunities: parental support, socio-demographics and developmental level.

The spread of these technologies in almost all regions of the world, specifically the internet, has been subjected to powerful scrutiny and critical reviews with regards to the challenges and opportunities generated by this technological integration and usage. These debates cover issues such as risk, quality of information, opportunities, intellectual property, infrastructure and digital divide, which are observed at local, national and international

levels (Gasser & Cortesi, 2016). An area that attract significant interest is the impact of digital technology on children and its widespread adaptation considering that most children are vulnerable when interacting with the digital environment (Livingstone, 2014).

Definition of Terms

In this study:

Digital Children's Rights refers to the debate focus on children's right in the digital environment, which has currently added participation but was before largely linked towards online children protection and provision.

Digital Literacy as having the right digital skills to achieve once goal.

Digital Technologies are devices that support the internet.

Risk is assumed to be the condition (negative or positive) occurring from children's internet exposure.

The Global South and North are adopted as defined by Oluwafemi (2012).

Aims

This work aims to critically explore the understanding of whether and how the internet increases the risks of harm to children and how digital opportunities can be optimized. By critically reviewing children's internet access, usage, risk and policies. While also aassociating evidence with the continues global discourse regarding practical solutions and policies on children rights and well-being in the digital age especially in the Turkish Republic of Northern Cyprus. While also designing and developing DLMA_NEU a children's digital literacy mobile application.

Problem Description

It is of great concern that one has to note the vast disparities that exist between the children of the Global South and North with regards to technological access, opportunities, online security as well as digital policy design and implementations (Urs Gasser & Cortesi, 2016; Nawaila, Kanbul, & Ozdamli, 2018).

Data on children's internet habits and the existence of risks are very few; mostly, non-representative and fragmented, and provide little possibilities for studies and countries' comparisons. In particular, survey methodologies vary significantly, likewise definitions of risks often differ, making it difficult to compare the prevalence rates of risk.

According to OECD, (2012), the question often raised by researchers in the field of children and media has been how to accurately and best measure media use (Vandewater & Lee, 2009). These researchers are more focused on media usage among children and the type of content children are exposed to, and the rate at which they are exposed. (quality and quantity of media content). Answers to these apparently basic questions have proven difficult to find. To date, methods for measuring media use among children employed by most researchers have failed in their ability to answer the questions. This leads to the increasing consensus in media and children research for the dire need of developing measurement approaches that will satisfactorily capture children media rights in the current digital technology era.

Research Question

1. Are children of Turkish Republic of North Cyprus facing risk online?
2. What type of risk are children of Turkish Republic of North Cyprus facing?
3. Are children of Turkish Republic of North Cyprus participating in policy and application design?
4. Where do children of Turkish Republic of North Cyprus access the internet the most?
5. Do children of Turkish Republic of North Cyprus have access to internet mediation?
6. Who mediates for the children in Turkish Republic of North Cyprus?
7. Are children of Turkish Republic of North Cyprus protected online?
8. Do children of Turkish Republic of North Cyprus have content representation online?
9. What are the main challenges faced by children of Turkish Republic of North Cyprus online?

Theoretical framework

Global time estimates: global estimates for media use generally takes two notable forms; average amount of time (mostly in hours) or days (in a week or month) spent on media under consideration. It uses to collect data with regards to the timeframe such as a month, week or even a day. Typically, in a closed-ended questionnaire, respondents answered using a Likert scale.

Global estimates are perhaps the commonest method of measurement due to its ease in administration and that its relatively inexpensive. Global estimates are often found in large-scale survey and public use with regards to children media use.

Global estimates can be problematic when respondents are required to decide on events that may require seconds or about complex events that may require multiple steps (Robinson & Godbey, 1997). Other issues may result from the question format of global estimates. For instance, "how many hours do you use your phone in a day?" which can be difficult even to a person with eidetic memory.

Methodology

Organization

To provide answers to the research question, the research work was organized in three phases:

- Phases 1: where extensive literature review was conducted to find the trend in research as well as finding research gap in the area of digital child rights
- Phases 2: where scale was developed, tested and validated as well as implemented, analyzed (using SPSS version 22) and result obtained.
- Phases 3: where a mobile application was developed to improve the children's digital literacy and testing

Participants

In order to test the scale and in the process gather primary data, a random sampling technique was used on 256 children from the Near East College Nicosia TRCN where children between the age of 13 – 17 were considered as participants.

Instruments

To conduct this study, a digital right scale was developed in Turkish to enable the researchers access the children digital rights. The scale was divided into the demographic information section and item section. The demographic information section part has 10 questions whereas the item part contains 73 items that requires a student to respond using a 5-point Likert scale from 1 strongly disagree to 5 strongly agree.

Research Limitation

Despite the fact that we are sure the research will accomplish its aims; the research has its own limitation nevertheless. For instance, the number of samples used while conducting this research and the fact that the research only considered in school children, might limit generalization.

Study Area

Cyprus is the third biggest island in the Mediterranean after Sardinia and Sicily. It lies 65 km from Turkey's southern drift. Other neighboring nations are Syria, Lebanon, Egypt, Israel and Greece. Since the division of Cyprus in 1974, the Turkish Cypriots have lived in the northern part of the island while Greek Cypriots live in the south.

Turkish Republic of Northern Cyprus (Turkish: Kuzey Kıbrıs Türk Cumhuriyeti) is the Turkish piece of the eastern Mediterranean island of Cyprus, isolated amongst Turkey and Greece since the late– twentieth century. It's known for its shorelines, huge mansions, and vestiges. North Cyprus covers a total area of 3,515 sq. km or nearly one third of the whole island. It is some 242 km wide and 64 km deep approximately. Having a Population (as at 2017) of 326,000.

Research Overview

The research work is sorted out in five chapters and related annexes.

- Chapter One contains general introduction, definition of terms, aims, problem statement, theoretical framework, research questions, methodology and research overview.
- Chapter Two covers review of related literature regarding digital children’s rights.
- Chapter Three gives a general description of scales and scale development procedure and process as well as the analysis and results of the Turkish digital child rights scales developed.

- Chapter Four discuss extensively the mobile application procedure and process as well as present the NEU_DLMA a Turkish children digital literacy mobile application.
- Chapter Five contains the conclusion as well as some recommendations.

CHAPTER II

LITERATURE REVIEW

Introduction

This chapter brings forth an in-depth review on researches conducted in the field of children rights in the digital world; the disparities between the genders and societies, as well as frameworks, polices research trends and gaps.

Information and Communication Technology (ICT) and Children

The consistently developing nature of ICT is ever-changing the manner children act both negatively and positively in first world nations, growing rapidly in second world nations and ever-increasing in the third world nations. This progressive technological integration into every day lives of people has progressively expanded its effect to not just utilities, but the overall community.

Like communities, kids now are clearly more technological devices dependent nowadays (Star, & Bowker, 2006). They go online currently in large volumes to socialize, partake, play and most essentially learn. As the Internet, ICTs currently represent an important fundamental establishment for kid's activities daily; And are shaping how children interact, study, play, and plan their everyday activities, these makes ignoring this progress not feasible to people keen about children' rights. Notwithstanding, kids are mostly seen as epicurean users of ICT by policy makers and researchers, with their demands deemed secondary (example; wasting time vblogging and taking selfie-takers) with their consumer needs as uncritical and not safe (example, sexting and grooming) (Vickry, 2017).

Global North

The Global North controls four-fifths of the global income and is home to a quarter of the world's population, it includes countries in Western Europe, Canada, United States, Israel, Australia, New Zealand and some developed parts of Asia, namely Hong Kong, Singapore, South Korea, Taiwan and Japan. It is home to four of the five permanent members of the United Nations Security Council and all the members of the G8. The North is characterized as the richer and more developed region (Oluwafemi, 2012).

From birth, many children of the North are passively exposed to digital technologies but assume an active role later in life. Schools of the North are immersed in technology to the extent that there are problem finding sufficient teachers that can use the technological devices (Germany, 2013).

Global South

The Global South consist of developing parts of Asia, Middle East, Latin America and Africa. It controls one-fifth of the world income and is home to three quarters of the world's populations. The Global South is the poor and less developed region (Oluwafemi, 2012).

The poverty, culture and training in most part of the Global South has exposed the children to frequent confrontation with problems, such as meeting life's basic needs, taking on the responsibility of the family which in turn affects their education, early marriage, violence and so on (Livingstone & Haddon, 2012).

The Divide

Since the 1960's the world has been divided between the wealthy and developed nations of the north and the poor developing and underdeveloped nations of the south. It is evident that digital divides can enhance the already existing social divides between the rich and the poor, rural and urban, children's and adults and between boys and girls (Kleine et al., 2014). Various research studies have been conducted on the north-south conflict and dialogue, but much of the work has been centered around international finance and trade flows with only a minimal focus on the digital divide (Thérien, 1999). The gap continues to widen in all but a few southern countries, which has become the thin layer that integrates into the stronger north.

The digital divide is a metaphor used to describe the disadvantage of those who choose not or are unable to make use of the digital technologies (Gorman, 2001). Income is the greatest determining factor of the digital divide globally (Chinn & Fairlie, 2004), while other factors such as the telecommunications gap and the quality of regulation also contribute, including behavioral and cultural attitude towards digital technology, for instance

the perception that digital devices are for intelligent people, are difficult to use, are for the white middle class families and so on and of course security concern (Gorman, 2001).

Digital divides also exist between genders in both the Global North and Global South. For instance, in most countries in the Global South, girls would normally go directly to their home after school (with the possibility of completely missing school during festive periods) thereby missing after school computer classes. Similarly, boys in the US are given better opportunities to interact with digital devices than girls (Byrne, et. al., 2016). This and many more issues have led to specialized considerations being made by some organizations in order to reduce the gender divides and challenges faced by girls in terms of accessing digital tools.

When it comes to project design, experts have noted that children were mostly the target but were rarely involved in the design process. Unless children, specifically girls, are involved, gender inequalities will continue to be reinforced.

Technological Access

When digital technologies were first introduced they were perceived as a Global North phenomenon and the expectation was that the users are going to be adults; however, even though reality has proven otherwise, the perception remains to a certain extent unchanged among regulators, legislators and Internet governance (Macenaite, 2017).

Many children have now integrated technology as part of their daily lives across very diverse geographical and cultural settings in both the Global North and Global South. Children's activities are currently built around mobile phones and the Internet to the point where differentiating between the online and offline worlds is very difficult.

Multiple organizations have cited the importance of internet access with regards to economic growth and civil right awareness (Leurs, 2017) and are currently researching ways to provide Internet access to every corner of the globe. Children should be integral component of this activity, not just because of their widespread usage of the Internet, but because of the bidirectional process of shaping that occurs between the children and the Internet.

When it comes to internet access, 92 percent of children in the United States go online and 99 percent of children in Canada have access to the Internet outside school. Furthermore, 88 percent of children in the UK and, 99 percent of children in Switzerland have Internet access at home, whereas only 42.3 percent of children in El Salvador, 14.3 percent in Malaysia and 11.8 percent in Bangladesh are connected to the Internet. 98 percent of children from Switzerland, 73 percent from the United State, 82 percent from Canada and 56 percent from Brazil use smart-phones to access the Internet (Byrne et al., 2016).

In 2009, 75 percent of children aged 6-17 of some Global North countries use the internet. However, some underperforming economies like Cyprus and Greece only reported 50 percent, which is less than some Global Southern countries like Brazil with 63 per cent (Livingstone & Haddon, 2012).

Internet penetration in Sub-Saharan Africa remains at about 11.5 percent, which might be attributed to some obstacles that may hinder Internet access, including social or traditional factors that may marginalize certain groups (eg people with disabilities or girls). A common example is that girls are married early or are assigned responsibility at a tender age in some societies, which gives them little or no study time for technologies (UNICEF, 2013) additional factors include as affordability, language and political instability (Byrne et al., 2016).

About 48 percent of people around the world uses the Internet and 70.6 percent of youth between the age of “15 and 24” actively online. Approximately 81 percent of the people in developed countries use the Internet, compared to 17.5 percent of the least developed countries and 41.3 percent of the developing countries. 95.7% of youths in Europe access the Internet, which far exceeds the level in Africa, which only has a total of 21.8% (Sanou, 2017).

Children’s access to the Internet in the Global South is often community based (e.g., cafes) or through mobile phones (unlike the north where the sources of internet access for children are home or school based or mobile phones) with erratic power supply, ethnic, gender and socio- economic issues along with exploitation or harmful consequences (Palfrey & Gasser, 2008). The most common device children use to go online in the global south is

the mobile phones, which is characterized by privacy and flexibility but has reduced potential for parental mediation.

Girls' social contact is often restricted or controlled, meaning that access to computers or phones by girls in most countries in the Global South may be difficult to the point that it is sometimes easier for boys to use computers for games than girls to use it for homework (Kleine et al., 2014). Even when they do have access, there are some elements, of insecurity; for instance, girls in Indonesia, the Philippines, Ghana and Bolivia feel unsecure when using the Internet cafes, with girls less likely to get funds to access the Internet than boys (De Pauw, 2011). Plan International (2010) also found that while online, there is a feeling of insecurity among almost 80 percent of Chinese girls.

The UNCRC guarantees children from both the Global South and Global North equal political, civic, cultural, social and economic rights comprising the right to access. Nevertheless, the percentage of technological access is higher in the Global North, although countries in the Global South are catching up. Social imbalance has a significant influence on both access and usage. For instance, rich children in both the Global South and North have better access and usage of digital technologies than their poorer counterparts (Hasebrink et al., 2011). Another factor is that in must Global South countries, the Internet is highly expensive, there are no local language provisions or regulatory bodies, child mediators are few or nonexistent and much of the services and content are tailored to adults.

Teacher training and improved Internet school access should be encouraged as it will further enhance the link between Internet and education, which will increase teacher mediation possibilities (Ihmeideh & Alkhawaldeh, 2017). Problems have been associated with the Internet that are mostly related to the Global North, including, issues such as cyber-bulling, grooming, solicitation and so on., It would be a mistake to think that the issue is only related to the Global North, since the rapid increase in Internet access supported by the penetration of smart-phones and increase broadband is indeed a worldwide phenomenon. Also, in must Global South countries, the IFs and HOWs of internet access are not well understood, regardless of knowing what the resultant consequence may be, therefore, bolstering digital technological access to all children around the globe without exclusion and

discrimination and at the same time enhancing digital citizenship and responsibility should be the main aim for policymakers interested in promoting opportunities for children.

Gender issues

Equal opportunity and Gender parity are a portion of the problems that majority of the local and international organizations wish to address, despite the fact that, some groups get leeway compared to others. For instance, boys in Indonesia, the Philippines, Ghana and Bolivia has a more secure feeling while utilizing Internet cafes and will probably get more resources to use digital devices than girls (Livingstone & Bulger, 2012). Additionally, the work of Goulds, (2013) presented to Plan International, stated that 79 percent of girls in China has an unsecure feeling while utilizing the web, which was assume to be restraining their participation online and limit their development.

Various research has proven that girls below the age of 10 are majorly targeted for actual or potential abuse, where in abusive images girls appears four times more than boys (UNICEF Innocenti Research Centre, 2011). Wolak et al., (2005) stated that almost all sexual crimes that occur against kids online are conducted by males, even though in 2009, it was found that ladies in the United Kingdom are now abusing boys too.

Kline et al., (2014) discovered during the research that in a few communities, majorly in the Global South, girls are viewed as women, married at an early age after being removed from school and handed the burden of raising a child, which consume most of their time leaving them with no or little time to learn, attend ICT training or utilized digital technologies. In these communities, a dad can give his partner a cell phone and grant access to his son, yet most likely give girls access to utilize them, despite the fact that, when presented with the favorable circumstance, it was shown that girls utilized the opportunity of these digital devices than boys, who will most probably indulge in game playing (Becker, 2000; Jackson et al., 2008). Girls are mostly absent during festive periods and are required to come back home immediately school closes, therefore missing after school computer training. For example, a few families in Pakistan and India won't permit girls to utilize smartphones even for learning purposes (however boys are permitted to utilize them to play) (Livingstone, 2014), which is restricting the opportunities that comes with technology and at the same time denying them of their rights.

The degree to which girls are shortchanged has result in eventual collapse of a few ventures being produced for children; also, most projects aimed at boys where undertaken by men. For example, a South African project mobile4girls that venture focus on girls, eventually does not succeed based on the fact that it never considered the needs or focused on girls, was designed by men and fail to consider them during the designing stage (Kline et al., 2014).

Difference in gender is present everywhere, for example, a research in the United States demonstrated that boys are trained to be innovative and explore while using digital technologies, which present an edge for them over girls (UNICEF Innocenti Research Centre, 2011).

Internet opportunities and risk

The instant internet growth joined with readily as well as cheap accessible information has present large portion of children to utilized the Internet, to either search through multiple documents as well as databases or browsing. The convenience and ease used to access the immense accumulated data and information is integrating the Internet and the world wide web in to an integral part of common individuals' daily activities. Freedom of expression & speech brought by the Internet has, to the extent that even the marginalized individuals can freely conduct different type of business as well as publish various content (Meryl & Goggin, 2017; Livingstone, 2003).

One can find anything on the Internet and all he need is a search methodology for the user. From activist to terrorist agendas, from buyers to products or ideas to infatuations (Wellman & Gulia, 1999), this strength has already turned the Internet into an avenue of training terrorist, religious extremists as well as criminal organizations (Taylor, Caeti, Loper, Fritsch, & Liederbach, 2007).

Our lives have been assimilated by the Internet producing a noteworthy shift in the manner in which we form communities or associate (Székely & Nagy, 2011). All geographical boundaries have been eliminated by the Internet, to the degree that your roommate or office colleague is a click away, likewise a person in another country or city. Fallows, (2004) discovered almost 89 percent of online American citizens admitted the Internet is important to their everyday lives and that majority of the sample undertake at least

an activity online daily. Many researchers have synonymously agreed that it is important for societies to raise the utilization and integration of computers and the Internet, since it has advantages, for example, improving education (Tinio & Browne, 2003), civic engagement facilitation (Norris, 2001) and healthcare promotion (Lu, Xiao, Sears, & Jacko, 2005).

A number of children viewed the Internet as source of learning & playing (Nansen, Chakraborty, Gibbs, MacDougall, & Vetere, 2012). Therefore, numerous kids search the Internet looking for experience (Deogracias, 2015) and friendship (Ihmeideh & Alkhawaldeh, 2017; Lee & Suzanne Horsley, 2017). There is an increase of 5.7 percent in world internet users from 2016 taking the total to approximately 3.6 billion, (Statista The Statistic Portal, 2018), of which substantial percentage is assumed to be children.

Children now-a-days find it easy and free to express their views on the Internet, specifically with the current rise in social media; where Zeinah, a young girl of Syrian-Dutch descent can serve as an example when she posted “Why can’t I say what I want?” (Leurs, 2017) while attempting to exercise the right to freedom of speech. other instance can be seen with Bana Alabed, whose fame was achieved by Vblogging and tweeting her childhood encounters while growing up in Alleppo a war-torn city (AlabedBana, 2017; Time Magazine, 2017).

As the Internet availability increases, access to images and videos that are questionable and misuse among children is progressively expanding (Franklin & Smeaton, 2017) and turning into a matter that worries numerous guardians or parents (Lecluijze, Penders, Feron, & Horstman, 2015; Ihmeideh & Alkhawaldeh, 2017). A case of inappropriate use of the Internet is surely cyber-bulling, where laptops and smartphones are utilized to harass and intimidate children (Mishna, Khoury-Kassabri, Gadalla, & Daciuk, 2012; Bradshaw, Crous, Rees, & Turner, 2017). contrary to conventional bullying, cyber-bullying follows casualties anytime, anywhere (Asher, Stark, & Fireman, 2017).

The worst problem associated with the Internet is its age-blindness, regards children and adults as equivalent, and only occasionally treating children in conformity with their "evolving capacity", as required by the CRC in Article 14 (Staksrud, 2013). While the Internet provide chances to learn as well as communicate via means that were by and large only a decade ago impracticable, it additionally has some costs that few parents as well as

certain groups thinks are useless. For example, the presence of numerous online risks, like, many forms of manipulation and exploitation, misinformation, grooming, hate speech, cyber-bullying and child trafficking are sections that attract grate worry (Lecluijze et al., 2015). The greatest confounding element is how to mark a boundary as to what constitute a risk online; a typical instance is when a child is exposed to pornography, as it presents a discussion regarding whether this is in connection to the child getting knowledge about sex early of becoming upset or maybe other elements. Subsequently, making both defining and measuring harm difficult (Slavtcheva-Petkova, Nash, & Bulger, 2015). Additional confounding issue is in connection with the procedure children figure out when a message online from an outsider is an initial step toward grooming or a cordial move? This has make drawing an unmistakable line between risk and opportunity extremely difficult, as it can obviously take away the "risky opportunities". Another issue is that of clarity with respect to who is at fault if children experience online harm, especially during the utilizing of sites that are multi-owned.

Risks online encountered by children online are often classified based on content, conduct and contact (Livingstone & Haddon, 2012). Content risk are used to explain those risks linked to illegal item viewing such as porno. Conduct is related to online children's behavior, for instance downloading contents that are illegal. Contact refers to the risks linked to harmful communication or harassment like grooming or bullying. During the design phase of these classifications, researchers plainly stated that children does not always occur as the victims, they may likewise be the offenders and that exposure to online risk does not necessarily imply harm, since kids have a method to develop shield that may lead to risk elimination (Livingstone & Haddon, 2012).

Drawing a line between the activities that will lead to risk and those that will lead to opportunities on the Internet is not easy (Lobe, et. al., 2011); therefore, making understanding the difference between risk and harm clearly necessary. Initially, researchers focused more on probable harm and technologically aided risk associated to children's privacy, safety and information overload but this focus more recently shift to opportunities related to children's digital technology utilization (Palfrey & Gasser, 2008); it is in this regard that children's digital rights was reviewed.

Children from the Global South can rarely access the Internet at home, and are more likely to go online via cybercafés where the possibility of encountering inappropriate content, and offline/online solicitation are high; economic conditions, parental knowledge and awareness and weak regulatory procedure can further aggravate the risk and the possibility of harm. Another area of concern is that children do not consider the people they contact as strangers but rather as virtual or online friends (Davidson, Martellozzo, & Mia Lorenz, 2009). For the most part, children from the Global South whose parents are deficient with regards to information and understanding the digital environment that is essential for offering support, protection and guidance coupled with extreme poverty, are more likely going to respond to online sexual solicitation (Dawes & Govender, 2007).

As stated by the European Union, the more parents use the Internet, the more internet skills they acquire and the better opportunities they have to mediate their children's Internet usage (Livingstone, Haddon, & Görzig, 2011). According to (Livingstone et al., 2011), there is increase tendency that children will report more upsetting or unwanted content or contact to guardians or parents who understand the Internet, since parental mediation has consistently been depicted as very effective method of risk reduction, enhancing resilience and improving digital literacy among children (Pasquier, Simões, & Kredens, 2012).

The borderless nature of technologies like the Internet makes it difficult for agencies or government to address what has now become a highly integrated and broadly scattered set of interests, similarly, its global nature has made imposing highly restrictive internet regulation a difficult task. As active agents, children will continue to indulge in risky behavior online despite the awareness of the risks because of their exploratory nature, misplaced confidence and self-belief.

Carr and Hilton (2009) estimated that there are millions of child abuse images online involving tens of thousands of children although a high percentage of the image are now Caucasians girls between the ages of 7 to 14. This leads to the question as to whether, child abuse image will be dominated by black or Asian children with the increased Internet penetration in the Global South.

In their research, Quayle & Jones (2011) noticed that the possibility for child abuse images involving Caucasian as opposed to non-white stands at ten to one, although boys are

more likely to be in contact with strangers online than girls, with the possibility of contact increasing as the child gets older.

Many victims of Internet crime find it hard to disclose due to complicity and shame until images are discovered by law even in the Global North (Franklin & Smeaton, 2017), which might have led to the implementation of strict measures and a reduction in the level of risk or even protection for those whom have later become victims.

Different type of risk exist for different societies; for example, children in Kenya are willing to meet strangers if they will give them some minutes on their phones (UNICEF, 2013) or the use of Internet cafes which are deemed to be hazardous and expose children to adults who use pornography or drugs (Livingstone et al., 2011). Nevertheless, it is the second most used source of internet in the Global South. The weak state structure in many Global South countries and wide-spread poverty can cripple children's legal and social protection, which will therefore increase their vulnerability (UNICEF Innocenti Research Centre, 2011). Research has also identified that Global North children tend to develop a shield when exposed to risk, whereas the risk can be too great for children in the of the Global South (Livingstone & Bulger, 2012). However, the majority of the research related to risk was conducted in the Global North.

There is very limited research on risk in the Global South, although emerging trends show that children engage in more dangerous behavior where teachers and parents have little support and training on Internet usage (Livingstone et al., 2011). This makes identifying the role of mediators particularly vital. While policy makers are heavily dependent on parents as well as schools to support as well as guide Internet utilization among kids in the Global North, but is impossible to achieved in the Global South due to the online adult to children ratio. For instance, research shows that South African children aged 15 – 17 possess greater digital skills than their parents, which implies that the parents may lack the necessary skills needed to mediate, since digitally skilled parents are vital in raising children that are self-confident and responsible digital technology users (Livingstone & Bulger, 2014). Hence, the question as to how should be responsible for the mediation and regulation of children's Internet utilization, especially in the Global South.

Research in the Global South shows a significantly higher projection in terms of risk of harm and lower levels of participation and provision with regards to ICT than Global North countries (Livingstone & Bulger, 2014; Livingstone, 2016a; Livingstone, 2016b). Nansen, et. al., (2012) stated that instead of focusing on measures for risk protection, it is better to train children with skills that will make them active, critical and ethical online participants.

It is of vital importance that governments develop child friendly and accessible reporting systems as strongly recommended by the Committee on the right of a child and there is a need for awareness programs in most of the Global South countries (Wurtele, 2012). For example, the research institution Plan India (2010) in their report stated that over 90 percent of the participants are unaware where to report online sexual exploitation and abuse.

The utilization, vulnerabilities and conduct of children online vary with age. While ICT cannot be seen as a creator of crimes, it has given all forms of old crimes a new dimension (UNICEF Innocenti Research Centre, 2011). It would consequently be a mistake to believe that all children are comfortable or equally proficient in the digital environment (Livingstone et al., 2011).

There is limited research on digital children's rights. among the little number of researches, very few tries to present a common view into children’s view on risk and privacy in the digital settings and the usage procedure as well as knowledge of online protection apparatus (Montgomery, Chester, & Milosevic, 2017). A cross-section of studies has proposed ways in which children's well-being as well as the risk of harm has been extended by the Internet (Best, Manktelow, & Taylor, 2014). For example, current studies undertaken by International Child Protection within Latin America, Asia & Africa proves that Internet serve as a means for learning, entertainment, interaction and self-expression (UNICEF, 2013), despite the fact that, majority of research concerning the utilization of online technologies and the Internet by children concentrated on adolescents because conducting research on them is easier (Staksrud, 2013). In spite of that, in a different study Nansen et al., (2012), demonstrates that little privacy intrusion in kid’s online activities by peers or

relatives would improve his desired competence, understanding and expertise for possible impending encounters with risk online, especially those that relate to data & security.

Policies and Rights

Countries of the Global South dominate countries of the North in terms of population. There are also more Internet users in the Global South than the Global North, with one third to one fifth of the population being children. It is therefore time to consider the rights and needs of children in national and global Internet policy and provision.

The UNCRC was the first treaty that viewed children as right holders (La Fors-Owczynik, 2015); it was also the first to perceive children's right to privacy as an fundamental right (Van der Hof, 2014). Nevertheless, UNCRC is a less active mechanism to turn to with regard to children's digital technology preventive practices.

It is a mistake to assume that all children are confident or proficient in the digital world (Livingstone et al., 2011) and the rapidly evolving and transnational nature of the Internet providers and online services is limiting the powers of states to establish online child's right under their area of jurisdiction (Livingstone, 2014). Hence most responsibilities for digital child's right falls on companies and intermediaries.

While designing policies for the rights and well-being of children in the digital world, skills, risks and access should be kept in mind. Additionally, children are not a homogeneous entity therefore the risks and opportunities of Internet usage can be categorized according to their place of access, digital skill level and age and special considerations to the most vulnerable children such as ethnic minorities, rural or poor, migrants, those with physical disabilities (Franklin & Smeaton, 2017) and the LGBT communities. Numerous actors responsible for children's positive internet usage and safety (civil societies, private and public) have an imperative undertaking to formulate policies that are balanced, inclusive and factual. Be that as it may, the facts on which these policies are based are very rare, particularly in the Global South.

Going by the consistent frame of reference, an overall framework as well as assessment of the issues linked technologies as they correspond to children's rights is always confounding when we view that the lives of children's rely upon confusing and conflicting

government strategies and legal principles (Asthana, 2017). For example, to protect children against pornography and hate speech, a few countries have embraced harsh regulatory practice like blocking, monitoring and filtering some Internet content. Nevertheless, these nations should be careful about the probability of unforeseen outcomes; for example, in Kenya where pornography punishment extent to children, high percentage of children were seen to download, view as well as search porno videos and pictures (UNICEF, 2013).

The freedom attached to the Internet has had an important positive political and social effect in most parts of the world, which has led to authoritarian and conservative governments mostly from the global south perceiving the Internet as something they need to control, unlike countries like the UK who are allowing the ICT industry to self-regulate, or the USA which relies on cooperate social responsibility.

While policy frameworks such as the EU agenda for the right of the child, the Council of Europe Recommendation on Empowering Children in the New Information, the European Commission's strategy for a better internet for children, and Communication Environment and so on are ever present in the Global North, the same cannot be said in the Global South.

To cope with the ever-increasing technological developments, Europe has adopted a multi-stakeholder approach with a strong dependence on self-regulation by the international regulatory bodies and forms of governance to tackle the global and complex nature of the Internet. On the other hand, the US depends strongly on the Federal Trade Commission (and, to a lesser extent the Federal Communication Commission). Most of the countries in the Global South have embraced rigid regulatory practices like filtering, blocking and monitoring public access to online content.

Various policies have been designed like the Optional Protocol to the Convention on the Right of the Child on the Sales of Children, Child Prostitution and Child Pornography which defines child pornography and insists on governments creating child friendly legal proceedings and was ratified by all but 43 UN members with 42 of them from the Global South (UN, 2002), even though they clearly have the highest child prostitution rate. The Protocol to Prevent Suppress and Punish Trafficking in Persons, especially Women and Children, supplements the Convention against Transnational Organized Crime (The UN trafficking protocol), which also defines trafficking and that children nor their parents cannot

consent to being trafficked. The Council of European Convention on Cybercrime first treaty was designed to address crimes committed via the Internet encouraging a common criminal policy as its main goal to globally tackle computer related crime. Although designed by Europe, other non-European global north countries are members, whereas South Africa is the only country from the Global South. The Council of Europe Convention on the Protection of Children Against Sexual Exploitation and Sexual Abuse's (Lanzarote Convention) first international instrument addressed all forms of sexual violence against children, which may occur within or outside the family, like grooming. The Convention was aimed at preventing and tackling the sexual exploitation and abuse of children (Fallis, 2013), all are either designed by the United Nations with various states of implementation or by Global North countries, which makes the adaptation of these policies by Global South countries vulnerable to failure.

In 2006, the UN Secretary-General study on violence against children recommended the strengthening of efforts to tackle the use of ICT for the sexual exploitation of children, by educating parents and children with regard to the dangers involved, punishing the perpetrators, distributors and consumers of the online child pornographic content and at the same time, encouraging the ICT industry to implement global standards for child protection. However, the final communiqué of the G8 meeting in 2011 made reference to children as potential victims of exploitation, sexual abuse and trafficking, therefore calling the international fora to enhance their cooperation while tackling internet governance ("G8-Summit-Deauville," 2011), nevertheless, numerous legal jurisdictions mostly from the Global South, failed to criminalize grooming or tackle child pornography (Livingstone & Bulger, 2012), while the European parliament and council adopted a directive on combating sexual abuse and sexual exploitation, which replaced the council's 2014 framework criminalize any form of child exploitation and abuse and also mandated the removal and optional blocking of those website hosting content among member countries. Singapore, Australia, Canada, UK and US introduce legal actions against grooming (Choo, 2009). In 2008, Brazil also amended the statute of children and adolescent (Soares, 2008). Japan passed series of laws on digital child protection and example of other legislation includes the Philippines Cybercrime Prevention Act 2012, South Africa's Protection against Harassment Act 2011 and Argentina's grooming law.

The European Commission's Safer Internet (now Better Internet for Kids) implementation of digital child rights not only requires adherence to the rights and values, but also children's empowerment and participation so that their societal engagement innovation and creativity can be encouraged. Countries that adopt the EU safer internet policies now teach Internet safety in school to children (Corish, 2017).

It should be noted that International treaties can only provide an action framework, but states have to implement them at national levels, which may require the development of policy appropriate laws, preventive strategies, child protection measures and victim support for children. According to Chinn and Fairlie (2004), one third of the Internet penetration will be closed if Global South counties employ the same regularity practices as the US.

Children should be part of the universal internet access process and stakeholders have the vital task of policy formulation that should be balanced and based on solid evidence; currently the policies are based on scarce evidence, particularly those in the Global South.

Frameworks

To promote the benefits of the Internet at insignificant risk for children, there is a need for a global framework and internal response and there is the need for policy makers to understand that for a reduction in digital child abuse and a boost in benefits, a harmonized international action and global policy framework is required. The framework should encompass an ethical inspiration and a strategic vision for public empowerment.

When it comes to children digital world protection, the private sector has an important role of designing a framework that will be global given its fundamental nature. And, as stipulated by the business and human rights guiding principles implemented in the United Nations framework (UNICEF Innocenti Research Centre, 2011), this sector has the authority to implement new instrument as well as design program for safer internet utilization among children. Nonetheless, the private sector till date has not design any global framework (UNICEF Innocenti Research Centre, 2011).

Numerous organizations have developed different framework; for example, to provide global treaty that include child protection, the action framework was designed. But, each country has to translate it at national level to fit the demands development policy strategy for response service and security, measures on child protection, relevant laws as

well as the political, social needs as well as culture of its people (UNICEF Innocenti Research Centre, 2011).

As indicated by Asthana, (2017), adding as a new category “participation right” (act and be heard), and expanding the rights to “provision” (access to food, clean water, shelter and health care) and “protection” (against exploitation, violence and harm), to the existing children's rights, UNICEF has designed a system currently referred to as 3P's.

Gasser & Cortesi, (2016) proposed actors/arenas perspectives as well as issues to be the theme for debate when it comes to the design of digital child rights framework. They proceed with further explanation that perspective can be split into different parts: political, which involve political parties integrating digital children’s rights into their respective campaign; intellectual, which draws researchers from diverse fields researching on the link within digital technology as well as social perception among children for them to gestate the right framework (Livingstone, 2014); legal, which involve enacting policies and creating laws; children’s perspective which involve soughing out children opinions. Actors/arenas here are the execution of digital technologies based on the development of digital technology for children’s rights, Internet governance and digital rights of children. Issue, constitute two methodologies: phenomenological issue, which tries to create a balance among opportunities and risk and considers other government organizations and institutions while talking about digital children’s rights and normative; where children’s digital technology utilization and access and the existing framework are differentiated to outline related issues or children’s rights.

A report on Child Safety Online by the UNICEF Innocenti Research Centre, (2011) on the other hand, proposed the accompanying key approaches for legislation framework and law enforcement design, having four primary objectives of promotion of rehabilitation and recovery procedures for exposed or abused children, reduction in access to online harmful material, abolishing all impunity tendencies from the abuser and promoting children’s resilience and empowerment.

In a government survey conducted by the International Telecommunication Union (ITU) found the primary problem associated with respect to protecting children online, which prompted the design of statistical framework for online child protection for digital child protection measurement (OECD, 2012). Similarly, the Internet Governance Forum (IGF) within its national framework has created a means for multi-actor policy debate, with

child protection issues discussed frequently and various stakeholders as participants from national, regional and global level (Livingstone, 2016a).

Notwithstanding the framework chosen by either the children or the researchers, effective or right focused or alternative viewpoint, the things that should attract attention are the political as well as intellectual engagement to go after the compliance and implementation of the framework.

Right of the child

A powerful means used by children to obtain their right is via social media. In addition to the fact that it provides a means for entertainment and acquiring information for self-expression. It likewise serves as an imperative medium that children utilized for education, and communication (Gillett-Swan & Sargeant, 2017).

Previous years has seen an array of laws, policies and practices; frameworks and comprehensive strategies focusing on the of children's in the digital world was established, analyzed as well as recommended in few instances (Gasser & Cortesi, 2016). Notwithstanding, digital children's rights significance was not limited to international but national, and with the shift in focus by previous research to opportunities as the core from risk and protection (Livingstone, 2014) with digital participation recently included, digital children's rights is currently part of numerous Internet bills which are part of the international rights (Gill, Redeker, & Gasser, 2015). Moreover, even though children are not particularly specified by some bills, but instead utilize an addition universal phrase like "a person" or "every-human", some particularly focus on children for instance iRight (Gill et al., 2015).

With the current online risks faced by children, concern from the public, policy makers and researchers are now entrusted with obligations of remodeling children's rights, especially the ones certified to cater for the "digital age" by the UNCRC, which include rights to provision and participation. Generally, among the maiden laws centered on Internet, drafted by a country was in the United State, where they aim to protect children against improper exposure to online content (O'Neill & Staksrud, 2012). The 1996 Communication Decency Act is an obvious example, which focused on reducing exposure to Internet content that are indecent among children.

According to the European Union General Data Protection Regulation (GDPR) (2016/679), children now require more online protection than ever before therefore the need for a data approach for subjects that is not age-blind; consequently, the GDPR in its attempt to bring forth the desired protection, provide a wide range of changes while operating on personal data children's, a typical case of which is data that is children appropriate (Macenaite & Kosta, 2017). Notwithstanding, the absence of apparent interpretation to certain concept, even in the Nations of Global North. For example, the lack of clear definition to children data consent, as even directive 95/46/EC doesn't plainly spell the required consent age for children (Macenaite & Kosta, 2017).

The association of different multi-partner digital child rights methodologies has expanded throughout the years. For instance, the Internet Governance Forum has evidently turned into a basic platform for developing as well as discussing accepted procedures with respect to children's digital technology access and utilization. Moreover, the Committee on the Rights of a Child in in 2014 shows commitment at the international level, by dedicating a complete day to discuss child rights and digital media, amid which they focused on online children engagement (Gasser & Cortesi, 2016).

Pundits have examined the regularizing as well as the all-inclusive terminologies backing the UNCRC, describing the ideas & debate on harmful effects of capitalism and children's rights on the lives of the Global South children (Imoh & Ansell, 2015). Studies have demonstrated that the idea of a right-bearing free autonomous person is not synonymous with the way of life of children in under developed nations (Asthana, 2017). Kids in the under developed countries largely stays as part of extended families, villages as well as in communities, rather than in nuclear family as done in the developed countries (UNICEF, 2013). Hence, the 2013 – 2014 suggest plans that places rights, flexibility as well as value as a core part of the UNICEF agenda (Livingstone & Bulger, 2012) in the least developed nations and after that utilized the upgrading children's participation and exposure.

As stated in the existing studies, children's digital rights are a long way from accomplishment in spite of the striking development in both access and digital literacy; kids are for the most part mention in terms of protection, whereas provision and participation rights are excluded. Notwithstanding, utilization of digital children's rights ought not be limited only to the values & rights of kids as people, but empowerment and participation of

users that are children as well. Scientists keep on demonstrating that numerous educational, interactive and participatory aspect are still utilized (Livingstone & Bulger, 2014) and thought for framework development as well as techniques focusing on the advancement of children's rights in the present-day world and endeavors be made by various sectors to implement as well as advocate the guideline set around by the Committee for the Rights of a Child (CRC), such as Ombudsmen.

Research conducted

The OECD (2012) noted that most research on ICT and digital right were conducted in and on the Global North, with lots of projection with regards to the way children use the digital environment in Global North and how they use them in the Global South. The impediments to children gaining access to digital technologies are completely different; most of the legislations and policies comes from the Global North, therefore missing the explicitness needed in research and hence leading problems during the adoption process in the Global South. SaferNet brazil, thinkuknow website, the Slovak Safer Internet Center a Hands for Children Venezuela are examples of initiatives in countries in the Global North and Global South that are now trying to secure their children online.

Research conducted on the Global North shows that family, psychological and demographic factors such as disability and low socio-economic status can enhance children's vulnerability online (Livingstone & Bulger, 2014). Addition, Global South research suggests unsupervised access as well as the location and context of Internet usage (Madden, et. al., 2013; Livingstone, 2014).

Most research on risk and usage has been conducted in the Global North, so the transfer of findings to other cultural and socio-economic settings must be approached with discretion. Nevertheless, there is sufficient research in the Global South to predict potential dangers and patterns (UNICEF, 2013). No research evidence has been found to support the assertion that the Internet endangers children. Nonetheless, genuine risks can be associated with the Internet. However sufficient research exists in the Global South to suggest a pattern for potential problems.

End Child Prostitution in Asian Tourism (ECPAT), in their work with children in some Global South countries to create awareness on safety and the responsibilities of Internet

Service Providers and also governments in ensuring better online protection for children, noticed that children have a unique perspective in planning and skills, in support mobilization and are more up-to-date when it comes to the latest technology. Other initiatives in Africa have shown that young people have a unique perspective in planning and skills and support mobilization and are also more current when it comes to the latest technology (Byrne et al., 2016).

'Early Adopter' are those countries who were first to encounter the problem and tried to solve it long before others had access to ICT. However, adopting their best practice might be hazardous because of the difference in usage (due to culture and language) and adoption (like landline before mobile in the North and mobile before landline in the South). Another question is related to the extent that policies and research designed for Global North related to the Global South. For example, Livingstone and Haddon, (2012) proposed a "Ladder of opportunities" which raised the question as to whether the ladder takes a different pattern when implemented in different cultural settings.

The bulk of the research on digital child rights is concentrated on the Global North countries like the USA, Canada and Europe, although research is now emanating from Australia and some parts of the Global South. What still remains ambiguous is the extent to which work in the Global North can be applicable to children in the Global South. encouraging studies on the rights of children's in the digital world in the Global South requires genuine thought, as it will enable the scholars in the Global North with an avenue to comprehend their very own characteristics, albeit studies presently emerging in the South (Madden, et. al., 2013)

CHAPTER III

TURKISH DIGITAL CHILD RIGHT SCALE (TDCRS)

Introduction

This chapter gives a general description of scales and scale development procedures and process as well as the analysis and results of the Turkish digital child rights scales developed.

What is a scale

A scale Is a tool or mechanism by which individuals are distinguished as to how they differ from one another on the variable of interest to our study. It has also been defined as the process of number assignment in order to measure a variable of interest to once research. According to DeVellis, (2016) Scales are collections of items combined into a composite score intended to reveal levels of theoretical variables not readily observable by direct means.

Types of scales

There are basically four (4) types of scales as summarize in figure 3.1 below

Nature	Nominal	Ordinal	Interval	Ratio
Type of Data	Discrete	Discrete	Continuous	Continuous
Description	1)Items can only be put in groups, 2)Numerical Comparisons are impossible	1)Items can be categorized and ordered in higher or lower format, but numerical difference cannot be calculated	1)Numerical difference between values is meaningful 2)But Ratios cannot be calculated (60 degree Celsius is not twice hot as Thirty degree Celsius	1)Ratios between two values are meaningful
Meaningful Operations	Percentage of Categories	Percentage of Categories	Addition and Subtraction of values	Addition, Subtraction, Multiplication and Division
Analysis & Interpretation	Bar Graph & Pie chart	Bar Graph & Pie chart	All tools for continuous data	All tools for continuous data
Example	Count of Male & Female in a group	Customer Satisfaction Survey Index: How did you like our ice cream? Excellent/Very Good/ Just OK/ Not Good/Did not like it at all	Temperature	Weight

Figure 3. 1 Types of scale

Scale Development

Is a process of developing a reliable and valid measure of a construct in order to access an attribute of interest. It encompasses multiple statistical, methodological and theoretical competencies. There is no clear rule when it comes to scale development (DeVellis, 2016). Although, certain steps need to be considered before one can ascertain to the validity and reliability of a scale. Scale development can either be deductive or inductive.

According to Hinkin, Tracey, & Enz, (1997), while developing a scale the following steps need to be adhered to:

1. Item Generation: which is the initial stage where items to assess construct are created. The creation can either be inductive or deductive. It is at this level that number of items are decided upon, and all other factors that will decrease the quality of items like redundancy, multiple negative, reading difficulties as well as double barrel are addressed.
2. Content Validity and pretesting: here items are screened and expert opinions are sort after to assess the level at which instruments has the required number of items to measure the construct as well as pilot testing of items.
3. Measurement Purification: is done with the purpose of getting an insight on dimensionality of the scale. By conducting reliability and factor analysis.
4. verification of dimensionality: the level at which the scale measures what it was design to measure. It also involved assessment of reliability by measuring internal consistency and conducting test-retest.
5. Nomological Validity: is the process of examining the correlation among construct.
6. Criterion Related Validity: is undertaken to assess the scale correlation to previous existing scales while also assessing the possibility of predicting future levels of a variable.
7. Accounting for Known Issues in Measurement Scale: assess the level of bias by respondents while reporting in order to favor someone.

Model

This research was guided by the ASSURE model. The model although an instructional design model, can be modified to tackle almost all design and development problems making sure the end product is what the user wanted.

The model commenced by assessing the user in detailed. Since whatever is design or planned without taking the time to assess the users will be ineffective. The model then processed to know the expectation or intended outcomes by presenting a roadmap for everyone in the team to know what is the target and what is expected of him. It also encourages the selection of strategies and design materials as well as utilization of these materials to make sure the process goes smoothly.

The most important aspect that necessitate the choice of these model was its user participation requirement. Finally, after the design was completed one need to take the time to evaluate the component (note that evaluation can be formative or summative). The data collected from these evaluations can be used for redesign purposes to fits future demands.

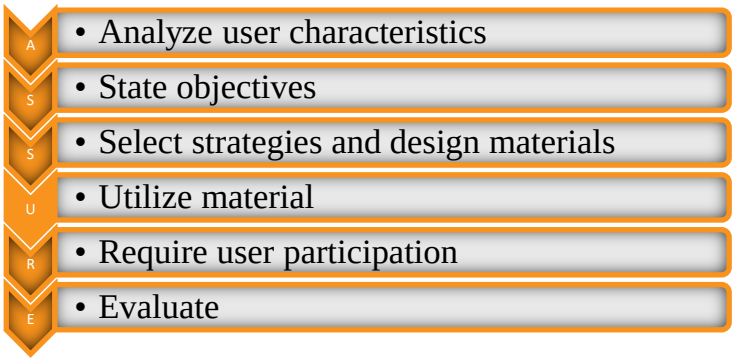


Figure 3. 2 ASSURE model design

Developing measures for the Turkish Digital Children Right Scale (TDCRS)

Although digital children's right is relatively young flied, majority of the research conducted were in and on the Global North (Davidson, Martellozzo, & Mia Lorenz, 2009; Lobe, Livingstone, Ólafsson, & Vodeb, 2011; Livingstone & Haddon, 2012; Gillett-Swan & Sargeant, 2017). But bodies like UNICEF are now concentrating on the Global South (UNICEF, 2013; Livingstone & Bulger, 2014;Kleine et al., 2014). Yet, virtually no research has been published with regards to digital children's right on the Turkish-Cypriots children.

The initial step towards the development of any quality cross-cultural research is to ensure measures employed are appropriate for the target population. Often, methodological bias due to linguistics variances in meaning while measuring latent traits with self-report instruments (De Vijver & Tanzer, 1997).

The most adopted process for developing a valid scale in another culture is to translate an existing validated measure. The process of translation should pay particular attention to equivalences between the two. This will enable the translated version to capture the aim of the original scale. Instead of just being word-to-word translation. But for the purpose of this research a scale was developed from the scratch.

In a pilot study, the newly constructed Turkish Digital Children's Rights Scale (T-DCRS) was administered to a small sample (n = 20) of Turkish college students to verify the coherence of the scale procedures and instruction as well as to seek feedback on the meaning of the items from the target population. The students in the pilot study does not report any problem with syntax.

Validation

The final step in this study was examining the factor structure of the TDCRS as well as exploring the construct validity of the TDCRS. To achieve this, a large sample of college students from near east college (n = 256) completed the Turkish version as a hard copy anonymously. No incentives were given to participants and participation was voluntary. Students complete the scale in their classrooms monitored by the researchers. With the process taking an average of 42 minutes. The sample was randomly divided into two, of which one was use to conduct an exploratory factor analysis, the other for confirmatory factor analysis. Furthermore, reliability analysis was conducted.

Result

General Information

The sample of the study constitute of 256 students from Near East College. Of which, female constitute 124 (48.8%) and male 132 (51.6%). Age between 13 to 18 years with a mean age of 14 years and 4 months. Majority of the children 110 (43%) are in class 8 followed by 99 (38.7%) in class 9. Whereas, 39 (15.2%) are in class 10 and 8 (3.1%) are in

class 12. The average family income (monthly) is between 3500TL – 4500TL. Although 47 (18.4%) of the total respondents didn't respond to this question, 107 of the 209 that responded (51.2%) report high family income (Above 4500TL) as compared TO 45 (21.5%) with a monthly income of below 2500TL.

Table 1

Showing the Respondents General Information

Name	Item	Frequency	Percentage
Gender	Male	124	48.4
	Female	132	51.6
Age	13	98	38.3
	14	89	34.8
	15	41	16
	16	19	7.4
	17	8	3.1
	18	1	1
Class	8	110	38.7
	9	99	43
	10	39	15.2
	12	8	3.1
Income Level	Below 2500	45	17.6
	2500 – 3500	23	9
	3500 – 4500	34	13.2
	Above 4500	107	41.8
	No Answer	47	18.4
Number of Siblings	Non	45	17.6
	1	163	63.7
	2	36	14.7
	3	7	2.7
	4	2	0.8
	5	2	0.8
	Above 5	1	0.4
Age at which first phone was acquired	5	4	1.6
	6	3	1.2
	7	14	5.5
	8	19	7.4
	9	20	7.8
	10	64	25
	11	74	28.9
	12	42	16.4
	13	7	2.7
	14	5	2.0
	No Answer	4	1.6

163 (63.7 %) of the respondents have just one sibling. Whereas, 45 (17.6%) have none. Only 12 (4.8%) have 3 or more siblings. With the remaining 36 (14.7%) having 2 siblings. The mean age of phone ownership was 10 years and 3 months. All this were shown more clearly in table 1 above.

As shown in table 2 below 5 (2%) start accessing social media at a tender age of 4 and the same number starts at the age of 5. 60 (23.4%) of the respondents start accessing social media at the age of 10 which forms the highest percentage. Only 19 respondents' states having started accessing social media at the age of 13 or above.

Table 2

Showing the age at which respondents start using social media

Name	Item	Frequency	Percentage
Age at which first social media account was registered	4	5	2
	5	5	2
	6	9	3.5
	7	24	9.4
	8	39	15.2
	9	28	10.9
	10	60	23.4
	11	41	16
	12	23	9
	13	14	5.5
	14	5	2
	No Answer	3	1.2

With regards to social media accounts, the respondents have registered for an average of 4 social media accounts. 228 (89.1%) of the respondent states they are active on Facebook. Which makes Facebook the highest registered social network site among the respondents. Followed by Instagram with 227 (88.7%) of the respondents said to have registered. YouTube has 207 (80.9%) membership among the respondent. Twitter has 102 (39.8%) membership among the respondents. Whereas, Others a combination of instant messengers, game sites and so on has 125 (48.8%) membership among the respondents.

When it comes to sources of Internet, (Although, more than half of the respondents confess to accessing the Internet through more than on source) wireless (WI-FI) has the highest patronage with 210 (82%) of the respondents. Cables has 70 (27.3%). ADLS has 35

(14.1%), 3G has 159 (62.1%) of the respondent. Whereas, other sources have 6 (2.4%) of the respondents.

With regards to accessible device, as expected Smartphone has the highest patronage with 251 (98%) among the respondent. Followed by tablet and pads with 209 (81.6%) patronizing them. Laptop computers are accessible to 166 (64.8%) of the respondents. Whereas others like PlayStation, Xbox and so on, has the patronage of 76 (29.7%) of the respondents. The average number of device accessible to a respondent was found to be at least 3. As below

Table 3

Showing Internet Source, Social Media account and Accessible Device

Title	Item	Choices	Frequency	Percentage
Social Media Accounts	Facebook	Yes	228	89.1
		No	28	10.9
	Twitter	Yes	102	39.8
		No	154	60.2
	Instagram	Yes	227	88.7
		No	29	11.3
	LinkedIn	Yes	22	8.6
		No	234	91.4
	YouTube	Yes	207	80.9
		No	49	19.1
	Others	Yes	125	48.8
		No	131	51.2
Internet Source	Cable	Yes	70	27.3
		No	186	72.7
	Wireless	Yes	210	82
		No	46	18
	ADLS	Yes	35	14.1
		No	220	85.9
	Satellite	Yes	24	9.4
		No	232	90.6
	3G	Yes	159	62.1
		No	97	37.9
	Others	Yes	6	2.4
		No	250	97.7
Accessible Device	Smartphones	Yes	251	98
		No	5	2
	Tablet	Yes	209	81.6
		No	47	18.4
	Desktop	Yes	99	38.7
		No	157	61.3
	Laptop	Yes	166	64.8
		No	90	35.2
	Others	Yes	76	29.7
		No	180	70.3

Descriptive Statistics of Items

Table 4

Showing Descriptive Statistics of the Items

ITEMS	Mean	Std. Deviation
I conduct personal research in digital environment.	3.5469	1.19712
I communicate with my teacher through social networks.	3.7852	1.20649
I am responsible for when and how to use the digital tools.	4.1484	.99874
I think there is gender equality in the digital environment.	3.7187	1.23947
Thanks to digital media, I think the boundaries have disappeared.	3.7383	1.16731
Our school has enough computers for everyone to use equally.	3.4063	1.34856
I report things that bother me in a digital environment.	3.5664	1.33265
I know my teacher's e-mail address and can contact when necessary.	3.0234	1.41679
I use slang words occasionally in digital environment.	3.2461	1.41074
I can freely use the digital tools in our school and I can express myself freely through these tools.	2.5352	1.34556
I know my right in digital environment and can complain against crimes committed in digital media.	3.7773	1.19854
I am not satisfied with the quality of service offered by the company we use in our house.	3.2383	1.43686
Through digital environment, I can freely meet other people for social, political, cultural or other reasons.	3.7383	1.17066
I think my personal safety is ensured when using digital tools in our school.	3.2070	1.23990
I shop on secure internet pages in digital environment.	3.4766	1.27088
From time to time, I encounter provocative, violent discourses and visuals in the digital environment.	3.4336	1.17968
I communicate and meet people I only know through digital environment.	3.0195	1.48839
I think my family respects my right to play digital games.	3.7930	1.14793
From time to time, I encounter hate speeches and visuals in the digital environment.	3.1836	1.31711
I think that I can use my right to search, receive and review information freely in digital environment without censorship or any other intervention.	3.4531	1.28862
At times, I access unsuitable sites at school.	1.8086	1.28585
I know what copyright means.	3.6133	1.36729
From time to time, I encounter pornographic images and videos.	2.7773	1.32296
Everyone in our school has an equal amount of internet connection.	3.3164	1.33339
In our school, computer labs are kept open to all students at all times.	2.5273	1.49221
My teachers use projection for lessons.	3.4062	1.32213
I copy-and-paste from time to time while doing my homework.	3.1484	1.42300
My teachers use smart board for lessons.	2.6914	1.40395
Sometimes I got involved in illegal activities using the school's resources.	2.0781	1.42586
I use appropriate aliases in the digital environment.	4.1211	1.12589
I only visit websites that are age-appropriate and have relevant information.	3.5820	1.27460
I choose my friends in the digital environment from people I know in real life.	3.6953	1.17862
I adjust my setting that my shares can only be seen by my friends.	3.7422	1.23190
I share appropriate content and photos in digital media.	4.1250	1.14103
Our teacher encourages the use of digital media by giving homework on the internet.	2.9492	1.37533
I share with my mother the good or bad things that I encounter in a digital environment.	3.4062	1.34856

ITEMS	Mean	Std. Deviation
I occasionally write provocative messages and inappropriate texts to people in digital environment.	2.5547	1.34490
I express my views freely in a digital environment.	3.5156	1.31050
In our school, activities related to safe internet use are organized.	2.7344	1.33128
My family follows me on digital media.	2.8242	1.31520
I make sure i acquire devices at the least possible cost	3.0898	1.12186
I share with my friend the good or bad things that I encounter in the digital environment.	3.6758	1.25884
My family constantly warns me about sharing appropriate photos.	3.2109	1.42610
Digital media is an essential platform for human and social interactions.	3.6484	1.05228
I share with my teacher the good or bad things that I encounter in a digital environment.	2.2617	1.26098
I shop online without my family's knowledge.	2.0078	1.24300
I'm involve myself in cyberbullying and vulgar conversations.	3.3281	1.32019
I can explain my feelings and thoughts in the way that I want online.	3.3437	1.18776
I share with my father the good or bad things that I encounter in the digital environment.	2.9531	1.35392
The Internet is the primary communication medium where freedom of thought and expression take place.	3.4609	1.20393
I think internet access cannot be prevented.	3.7461	1.22794
I use filtering, restriction and control software for safe internet usage.	3.3398	1.21338
My family encourage me to go online.	2.7227	1.24823
Free and unlimited Internet is the right of every user.	3.9609	1.22332
I don't know my legal rights if there's a problem on the Internet.	2.8633	1.31390
My parents talk in a common language about digital media.	3.3633	1.25747
I use antivirus software on my devices to protect my digital data.	3.4141	1.35778
It is decided which device is used in our house.	2.9102	1.42379
Censorship in digital environment violates the right and freedom of access to information from internet users.	3.1562	1.18114
My parents use goes online most of the time.	3.4414	1.19003
My family speaks to me about what to do online and who I should interacting with online.	3.6602	1.29469
The rules for internet usage at home are decided and complied by my parents.	3.1641	1.35344
I can contact other people using digital technologies.	3.8789	1.10834
Our school has rules regarding the use of mobile phones.	3.8984	1.38247
I put difficult passwords on my online accounts.	3.8516	1.26856
I can express my freedom of religion and belief in a digital environment.	3.1406	1.28481
I am aware of the problems that may arise as much as I am aware of the benefits of using the internet.	3.9453	1.07964
I think the internet connection is good across my area.	2.5195	1.40294
Our school has rules, policies and laws for the use of digital media.	3.6250	1.29857
From time to time I encounter racist discourses and visuals online.	3.3086	1.22494
I accept the website conditions when I am a trying to register for membership after reading.	2.9805	1.35314
I share my videos appropriately in the digital environment.	3.0078	1.41973

The item with the highest score is “I am responsible for when and how to use digital technology” with mean (4.1484). This shows the freedom children of TRNC have online which can in one hand allow them reach their online potentials but on the other hand subject them to huge risk. The item that earn the second highest point is “I share appropriate content and photos in the digital environment” with mean (4.1250) followed by “I use appropriate aliases in the digital environment” with mean of (4.1211). This point to the fact that children of the Turkish Republic of Northern Cyprus are conversant with the risk online and are trying to protect themselves online.

The item with the lowest point is “at times, I access unsuitable sites at school” with mean of (1.8086) followed by “I shop online without my family’s knowledge” and “Sometimes I got involved in illegal activities using the school resources” with mean (2.0078) and (2.0781) respectively. Which shows that few among the respondents are willing to do things online that will put them at risk.

Other items that receive few points includes “I share with my teacher the good and bad things that I encounter in the digital environment” mean (2.2617) which show the children really shares their online problem with their teachers which agrees with both UNICEF Innocenti Research Centre (2011) and Livingstone & Third (2017), “I think the internet connection is good across my area” mean (2.5195), “in our school computer lab are kept open to all students at all times” with mean (2.5273) which shows the internet connection is some areas mostly the rural areas of TRCN is bad, “I can freely use the digital tool in our school and can express myself freely through these tools” with mean (2.5352) which show the number of digital devices are in the school which may be attributed to either the large number of students the schools are having, the devices are outdated or the digital nature of the students, “I occasionally write provocative messages and inappropriate texts to people in digital environment” with mean (2.5547). This shows that significant number of the respondent engaged in cyberbullying or sexting. and “From time to time, I encounter pornographic image and videos” with mean (2.7773) which can be attributed to either virus or malware, lack of moderation by proper authority or not using the appropriate security channels.

The complete descriptive statistics of all the seventy-two items is shown in table 4 including the means and standard deviation of each item.

Mediation

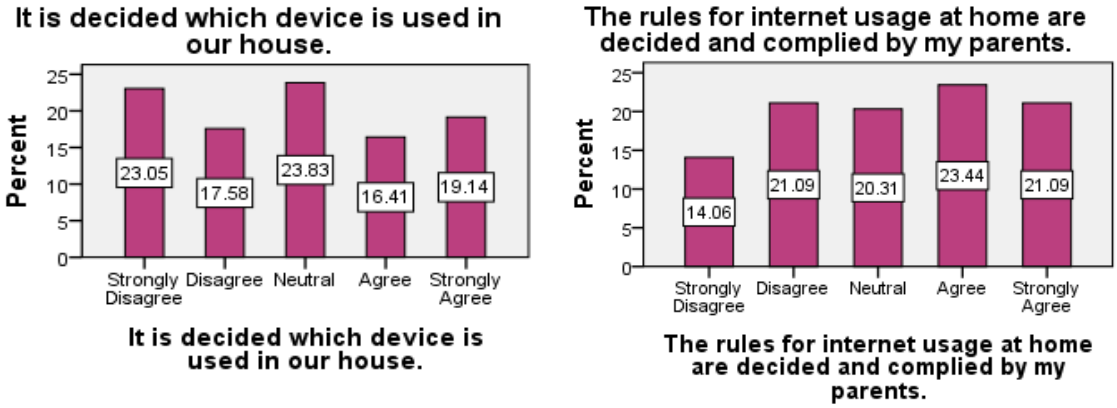


Figure 3. 3 Showing Parental Mediation

While trying to access the level of mediation it was noted that children of Turkish republic of North Cyprus have access to low level of parental mediation judging by the fact that only 35.55% of the respondents were moderated by their parents on which device to and only 44.53 as can be seen in figure 3.3 above.

Cyberbullying and Sexting

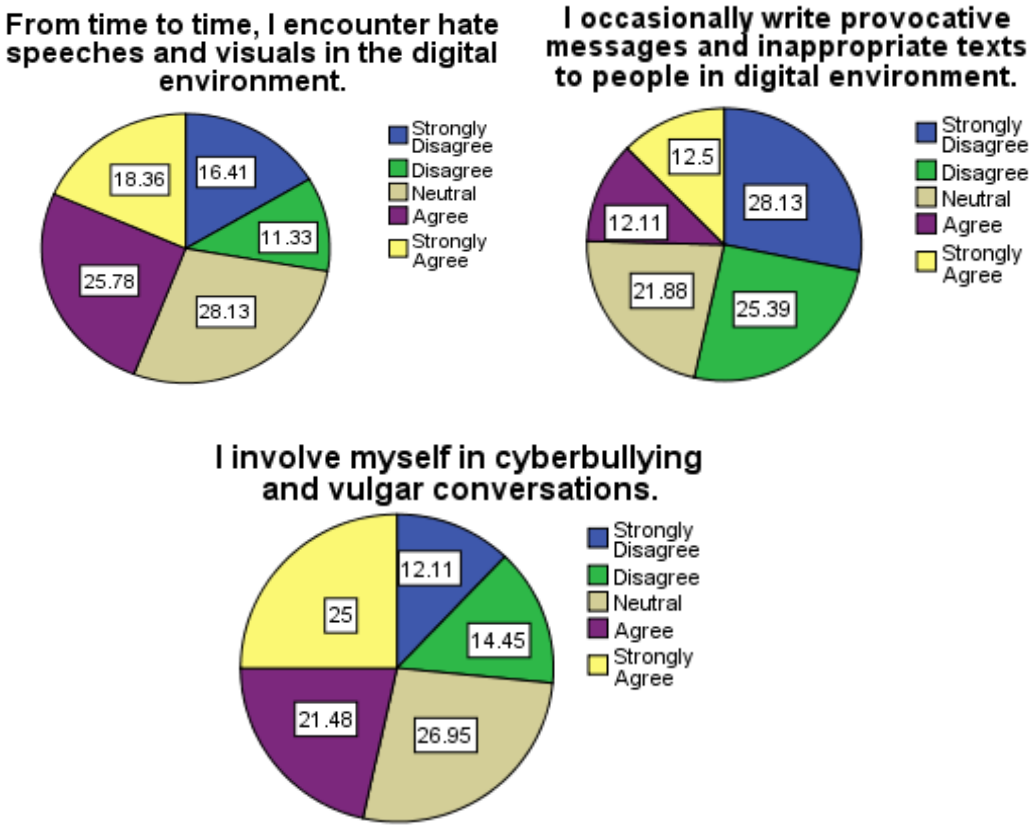
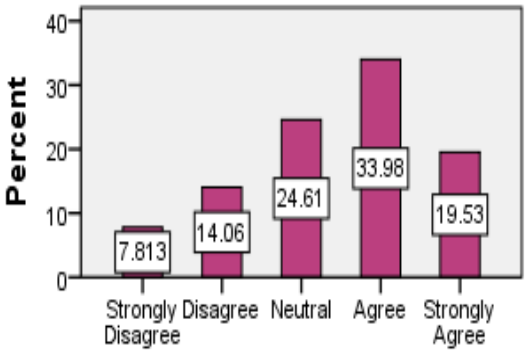


Figure 3. 4 Children participation in Cyberbullying and Sexting

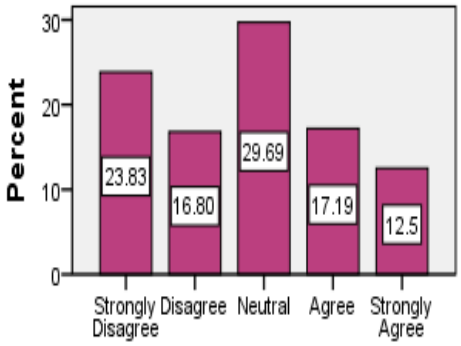
While accessing some of the unwanted behaviors children indulge in online, like cyberbullying and sexting. It was found that almost 45 percent of the respondents have encountered hate speeches and visuals online. Whereas 47 percent of the respondents partake in cyberbullying and sexting which conforms with Mishna, Saini,and Solomon, (2009) and Ong, (2015). Detailed illustration can be seen in figure 3.4 above.

Unwanted View

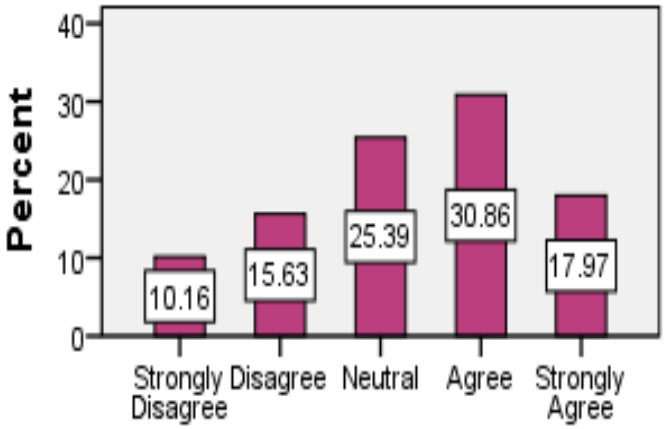
As shown in figure 3.5 below, 53.51 confess to encountering provocative and violent discourse and visual online with only 21.9 percent stating otherwise. Only 29.7 percent states encountering pornographic images online, which was not suppose considering that most systems are protected as stated by the respondents. 50 percent of the respondents have encountered racist remarks online with only 26 percent of the respondent not coming across these remarks.



From time to time, I encounter provocative, violent discourses and visuals in the digital environment.



From time to time, I am encounter pornographic images and videos.



From time to time I encounter racist discourses and visuals online.

Figure 3. 5 Showing Unwanted Views

Digital Literacy

Table 5

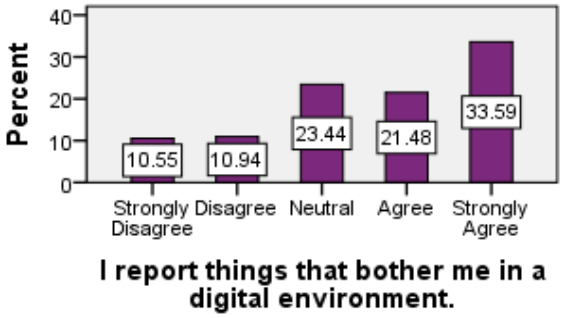
Showing the analysis of Digital Literacy among TRCN Children

ITEM	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
I know what copyright means	91	35.5	59	23	55	21.5	18	7	33	12.9
I can freely use the digital tools in our school and can express myself freely through these tools	24	9.4	44	17.2	60	23.4	45	17.6	83	32.4
In our school, activities related to safe internet use are organized	60	25.8	38	14.8	83	32.4	36	14.1	33	12.9
My family constantly warns me about sharing appropriate photos	41	16	46	18	56	21.9	44	17.2	69	27
My family speaks to me about what to do online and I should interact with online	23	9	27	10.5	53	20.7	64	25	89	34.8
I am aware of the problems that may arise as much as I am aware of the benefits of using the internet	7	2.7	15	5.9	69	27	59	23	106	41.4

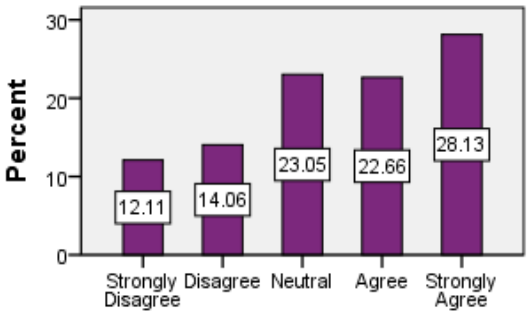
Only 26.6 percent can freely use the device in their school which has been attributed to the school not allowing the students based on the student's capacity to handle the device with caution.

Only 40 percent of the respondents states that the schools organized activities with regards to safe internet usage, which is a very small number considering the digital nature of the children of TRNC (where students on the average possess just over 3 devices which is above the world average (Statista.com, 2019) and an average of 4 social media account per child which correspond to the world average (Nawaila, Kanbul, & Uzunboylu, 2018). Another issue worth note is the fact that the respondent possesses no formal digital literacy as their parents allow them to navigate the web blindly with 59.8 percent stating that their family did not speak to them about what to do online and who they should interact despite some of the respondent are active online since the tiny age of 4. Which can be seen in table 5 above.

Information Sharing



I report things that bother me in a digital environment.



I share with my mother the good or bad things that I encounter in a digital environment.

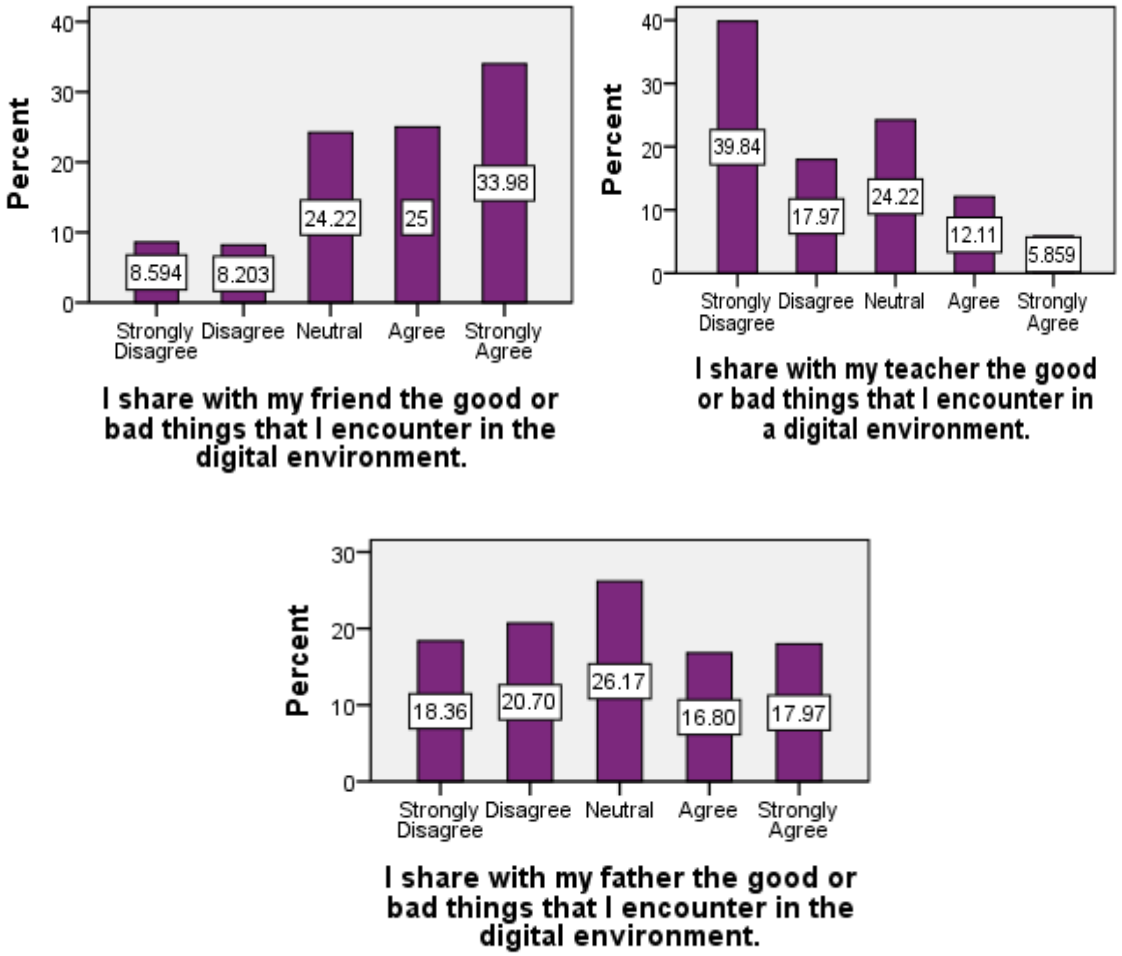


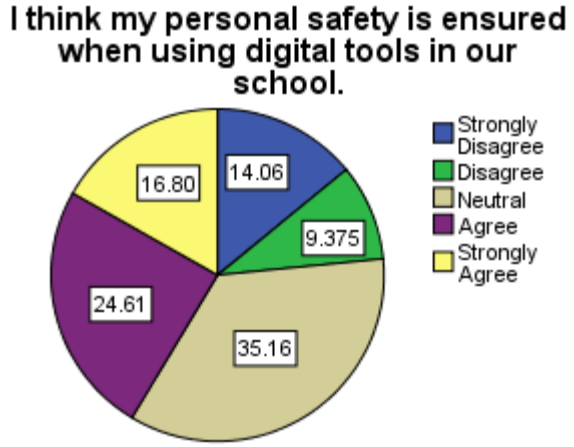
Figure 3. 6 Showing who the children share Information with

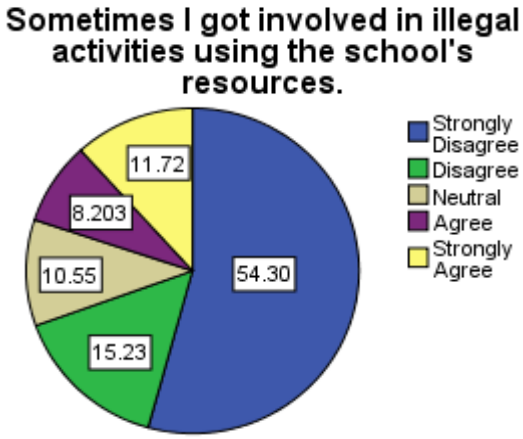
Judging by figure 3.6, 50.07 stated that they report things that bother them online whereas 21.49 said they don't report it. 58.98 confess to sharing with friends what happened to them online, 50.79 will share it with their mothers but only 34.77 will share with their father whereas only 17.67 will share what happened to them online with their teachers which conform with Livingstone, (2016a)

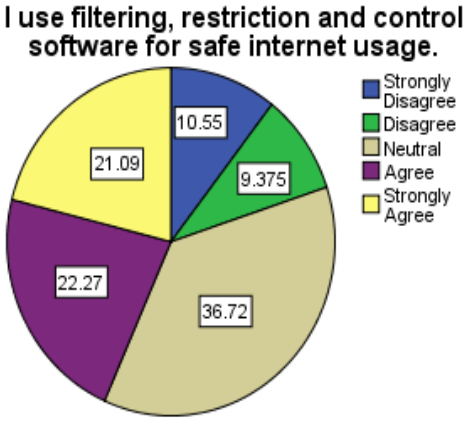
Security and Risks

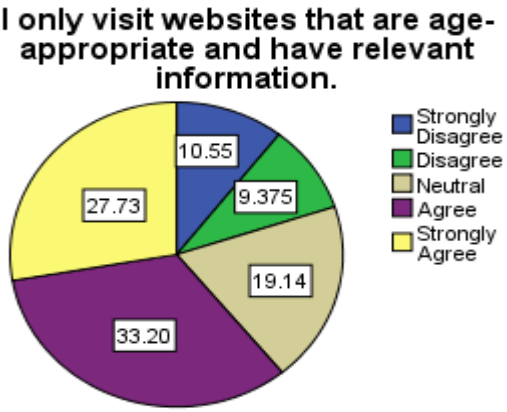
41.41 percent agrees that their personal safety is ensured online with 23 percent thinking their personal safety is not ensured online, with no significant difference between the genders which counters Livingstone & Bulger, (2014). More than 80 percent does not get involved in illegal activities using the social resources, with 43.36 using filtering restriction, control software's and antivirus for online protection. 58.20 only accept

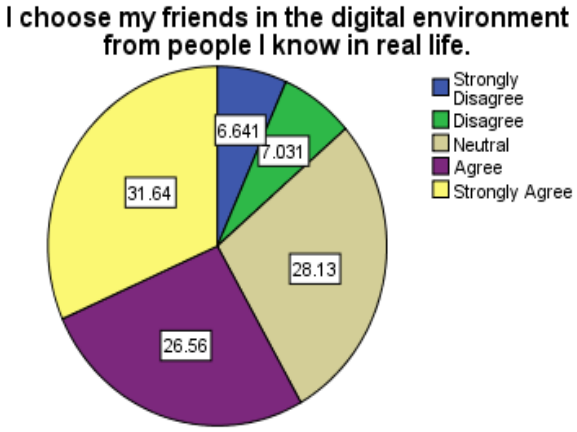
friendship request from people they know. Whereas over 60 percent agrees to visiting only ages appropriate websites and also used difficult password to prevent hacking.

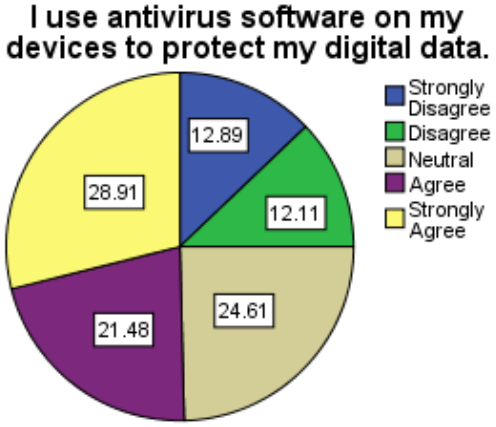












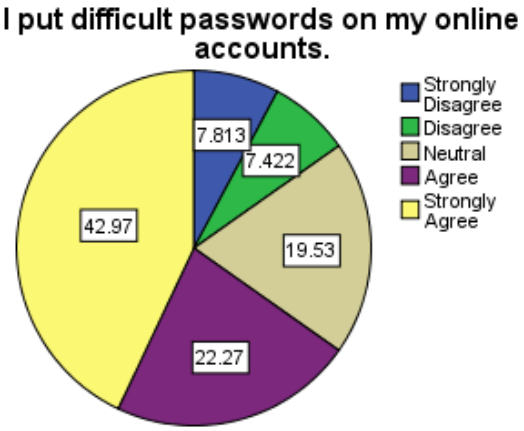


Figure 3. 7 Showing the Risky activities the Children Undertake

Policies

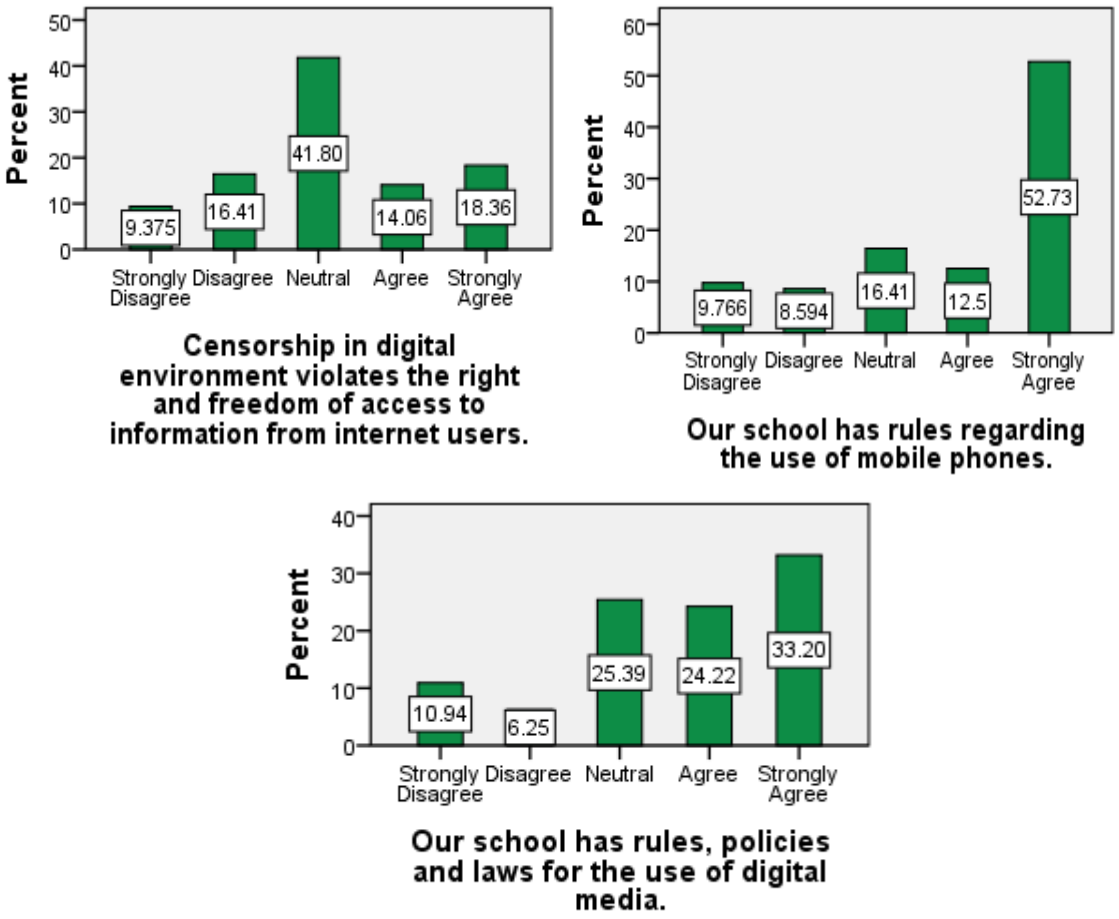
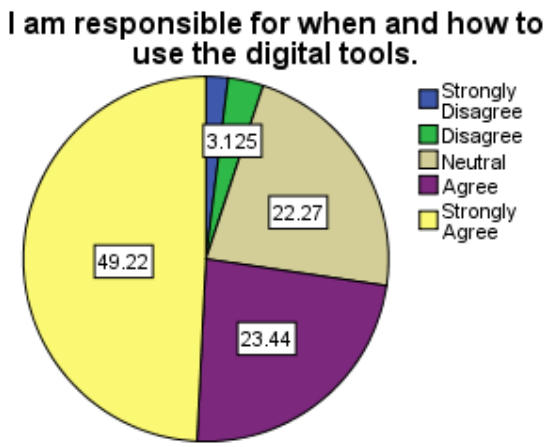


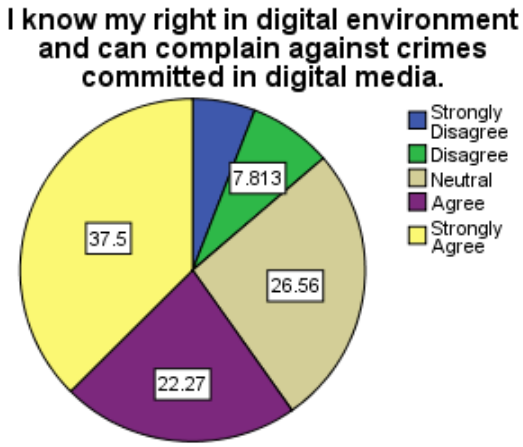
Figure 3. 8 Showing some of the available digital policies

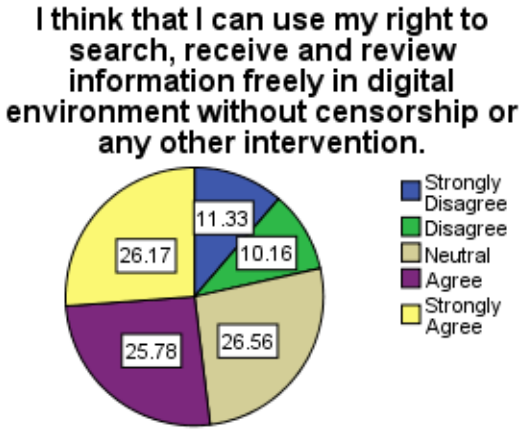
When it comes to policies, figure 3.8 above shows a mixed reaction with regards to censorship of content in digital environment with 32.42 thinking it's a violation of rights, 25.80 disagreeing and 41.80 where neutral. Strict rule with regards to smartphone and other private digital devices in school was also noticed.

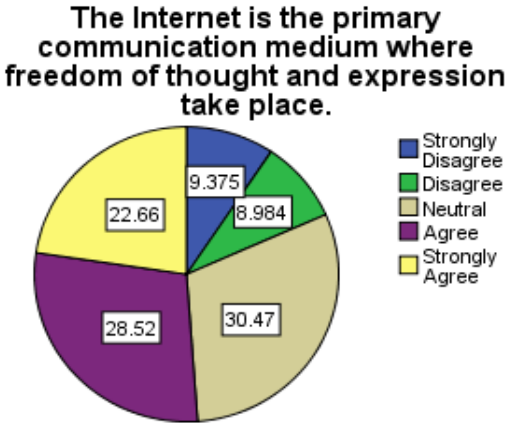
Rights

71.66 percent confirmed using digital tools at will, with only 5.07 moderated. 59.77 agrees to knowing their rights in digital environment and can complain against online crime with 51.95 percent went a step further to state that they do not need moderation or censorship since internet is the primary communication medium in which they express their freedom of expression and thought. This made making the internet free and unlimited compulsory according to them as shown in figure 3.9 below.









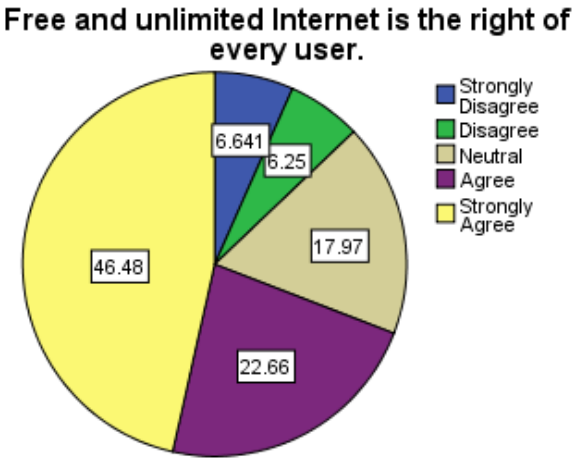


Figure 3. 9 Showing some accessed rights

Gender Issues

Table 6

Showing t-test among the genders

	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference
I think there is gender equality in the digital environment.	2.333	.128	-1.837	254	.067	-.28348
			-1.833	249.069	.068	-.28348

Table 7

Showing mediation among genders

	F	Sig.	T	df	Sig. (2-tailed)	Mean Difference
It is decided which device is used in our house.	.791	.375	-2.745	254	.006	-.48265
			-2.752	253.945	.006	-.48265

Table 8

Showing Mediation between the genders

	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference
The rules for internet usage at home are decided and complied by my parents.	1.011	.316	-2.746	254	.006	-.45894
			-2.749	253.766	.006	-.45894

Table 9

Showing t-test results with regards to gender

	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference
Total number of social media account	.527	.469	.740	254	.460	.12903
			.739	251.325	.461	.12903
Internet_Access_Total	7.823	.006	-.010	253	.992	-.00111
			-.010	250.707	.992	-.00111
Digital_Device_Total	11.674	.001	-2.103	254	.036	-.27786
			-2.120	244.341	.035	-.27786

An independent sample t-test was conducted to access gender equality as shown in table 6 above, and no significant difference was found between the genders when ask about gender equality online with both genders agreeing to the existence of gender balance online. With a mean of 3.5726 and 3.8561 for females and males respectively.

Similarly, no significant difference was found when it comes to moderation of devices to be used by the children and internet usage at home. This can also be seen in table 7 and table 8 respectively. Other factors with regards to gender that shows no significant difference are with regards to number of devices, internet access and number of social media account. Where females average 3.0403, 1.9837 and 3.8790 and males average 3.3182, 1.9848 and 3.7500 for number of devices, means of internet access and total number of social media accounts respectively. Which is presented in table 9.

There is a minor but significant positive correlation between age and first social media account which implies older children open their social media accounts at old age and younger children opens theirs at younger age. At the same time positive correlation also exist between the class of the child and the age at which he receives first phone which shows children in bigger classes receive their phones at an older age compared to their counterpart in smaller classes.

A significant negative correlation exist was traced between the class a child is in and the number of internet sources, where is was found that children in lower classes has more sources to access the internet compared to the children in higher classes.

A positive correlation was also noted between the time a child receives his first phone and the age he registered his first social media account. Which implies opening a social media account is slightly dependent on the time a child receives his first phone. But a negative correlation exists between the time a child receives his first phone with both the number of social media account, sources of internet access and number of digital devices. Implying, the younger a child receive his phone the more his social media account and the older the child he received it the less the social media account. Similarly, the younger a child receive his first phone the more the sources of internet access he possesses and the younger a child receives his first phone the more the number of technological devices he possesses.

Another positive correlation is in the number of social media account and the number of internet sources which implies the more the internet source the more the number of social media accounts. This is shown in table 10.

It was also noted that children from the families with highest income possesses devices at an early age with an average of 9.4 years, followed by families with the lowest possible incomes with an average of 10.1 years which was a surprise this is shown is table 11 and figure 3.10.

The children in class 8 own a phone at a much younger age average with a mean age of 10 years. Followed by those in class 9 with 10.3 years, those in class 10 with an average age of 10.8 years and lastly class 12 with 11.4 years which implies as years pass children possesses technological devices at a much younger age compared to their counterparts in more advance classes which is shown in table 12 and figure 3.11.

Table 10

Table of Correlations

Correlations

	Gender	Age?	Class	Income Level	first phone?	first social media account?	No of social media account	Internet_ Access_ Total	Digital_ Device_ Total
	1	.218**	.152*	-.038	.086	-.157*	-.046	.001	.131*
Gender		.000	.015	.588	.176	.013	.460	.992	.036
	256	256	256	209	252	253	256	255	256
	.218**	1	.607**	-.176*	.149*	.188**	.033	-.079	-.019
Age	.000		.000	.011	.018	.003	.602	.209	.761
	256	256	256	209	252	253	256	255	256
	.152*	.607**	1	-.052	.178**	.003	.024	-.178**	-.063
Class	.015	.000		.456	.004	.961	.699	.004	.317
	256	256	256	209	252	253	256	255	256
	-.038	-.176*	-.052	1	-.054	-.121	-.006	.065	.155*
Income Level	.588	.011	.456		.438	.082	.927	.353	.025
	209	209	209	209	207	208	209	209	209
	.086	.149*	.178**	-.054	1	.303**	-.251**	-.178**	-.243**
first phone	.176	.018	.004	.438		.000	.000	.005	.000
	252	252	252	207	252	251	252	251	252
first	-.157*	.188**	.003	-.121	.303**	1	-.285**	-.135*	-.183**
social	.013	.003	.961	.082	.000		.000	.032	.003
media account	253	253	253	208	251	253	253	252	253
No of	-.046	.033	.024	-.006	-.251**	-.285**	1	.352**	.301**
social	.460	.602	.699	.927	.000	.000		.000	.000
media account	256	256	256	209	252	253	256	255	256
Internet	.001	-.079	-.178**	.065	-.178**	-.135*	.352**	1	.349**
_Acces	.992	.209	.004	.353	.005	.032	.000		.000
s_Total	255	255	255	209	251	252	255	255	255
Digital_	.131*	-.019	-.063	.155*	-.243**	-.183**	.301**	.349**	1
Device	.036	.761	.317	.025	.000	.003	.000	.000	
_Total	256	256	256	209	252	253	256	255	256

**. Correlation is significant at the 0.01 level (2-tailed).

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

When it comes to digital device ownership, children from the lesser income families record better average at class 9 and class 12 with an average of 3.3 and 3.0 device per child and are lowest at class 8 with an average of 2.3 device per child. For those families with

income between 2500TL and 3500TL their peak is at class 10 with an average of 4 device per child and an average of 3 devices per child at both class 8, 9 and 12.

Children from families with income between 3500TL and 4500TL peaked at class 12 with an average of 5 devices per child and lowest was 2.9 at class 9 whereas they averaged 3 device per child at all other classes. Finally, the children from the highest income peaks at class 12 with devices average of 3.5 at all other classes. This can be seen in figure 3.12.

Table 11

Showing the relation between income and age of phone ownership

Descriptive Statistics

Dependent Variable: How Old where you when you own your first phone?

What is your family Income Level?	Mean	Std. Deviation	N
Below 2500TL	10.0889	1.79421	45
2500TL - 3500TL	10.4783	1.97414	23
3500TL - 4500TL	11.0588	1.25387	34
Above 4500TL	9.9429	1.65732	105
Total	10.2174	1.70553	207

Table 12

Showing the relation between class and age of phone ownership

Descriptive Statistics

Dependent Variable: How Old where you when you own your first phone?

Which Class are you In?	Mean	Std. Deviation	N
9	10.2474	1.72017	97
8	10.0000	1.49766	108
10.00	10.8421	2.00710	38
12.00	11.3750	2.19984	8
Total	10.2659	1.71377	252

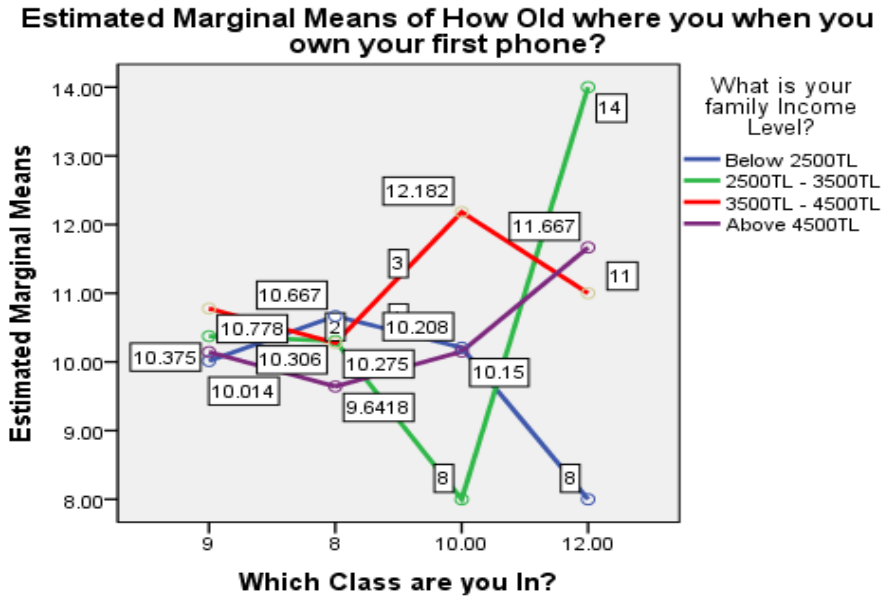


Figure 3. 10 Showing the relationship between age of phone ownership, family income and class

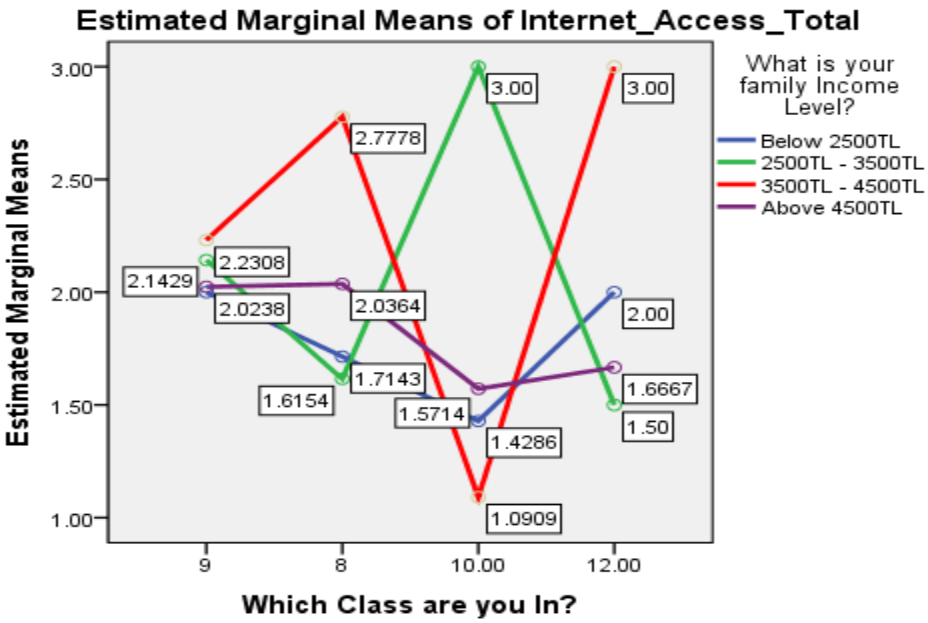


Figure 3. 11 Showing the relationship between internet access, family income and class

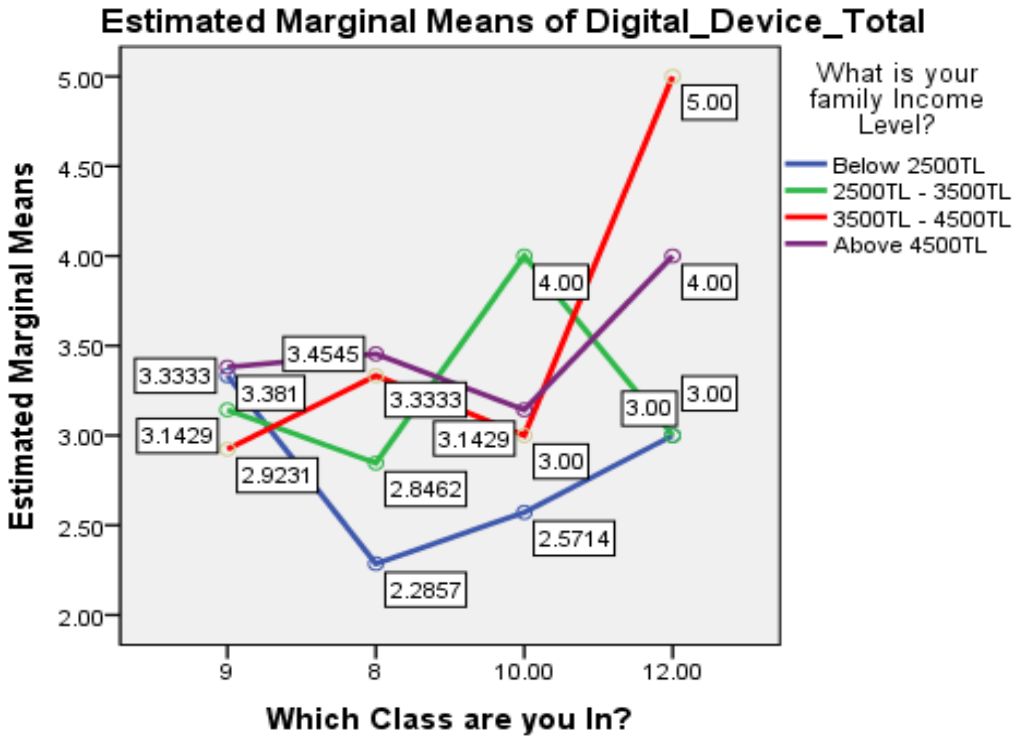


Figure 3. 12 Showing the relationship between number of digital devices, family income and class

CHAPTER IV

DIGITAL LITERACY MOBILE APPLICATION (DLMA_NEU) DEVELOPMENT

Introduction

In this chapter we will conduct an in depth discuss on what mobile application is, types of mobile application, mobile development principles, model of mobile app development while also relating it to DLMA_NEU our developed mobile application.

Mobile Application

The massive surge in mobile usage has progressively increase the demand on applications running on mobile devices (otherwise known as mobile application or mobile apps). Mobile apps are software design to run on mobile operating systems (Wong, Khong, & Chu, 2012). These applications through the application stores have provide a massive opportunity for developers and designers alike. Depending on the type of mobile app one can be able to download the application via a specific platform free or at a small cost.

According to statista.com there are over 11 million mobile application shared across the application stores with over 197 billion downloads. Techcrush.com reported that customers use an average of 9 apps daily and 30 apps monthly.

Types of Mobile Applications

According to Thinkmobile, (2018) There are basically three types of mobile application:

Native apps which are specifically develop to target only a single platform or store. Example Windows, iOS or Android. A native app developed for Android will only work for Android and new application has to be developed for it to work on iOS.

Web apps one web pages that employ the use of mobile browser. They work on all phones irrespective of the operating systems.

Hybrid app are multi-platform application. They are developed to operate on various platforms. It comprises of both web app and native app.

The table 4.1 summaries the distinction between Native and Hybrid applications

Native Vs Hybrid Mobile Application

Table 13

Difference Between Native and Hybrid mobile application

	NATIVE	HYBRID
User experience and support	High	Medium
Quality	High	Medium
Security	High	Low
Market and users	Medium	High

App Store

App stores is a digital distribution platform upon which mobile apps are made available and downloaded. Different mobile operating system operates different store although there are multiple third-party app stores like Amazon Appstore (Rouse, 2013).

Typically, mobile apps are basically online stores where users can go through different app categories, view app information (e.g. rating) and possibly acquire the app (including purchase where needed). Mobile apps submitted by developers to app stores goes through an approval process (like Censorship & Quality Control).

There are basically 13 mobile app stores according to www.quirksmode.com of which Android & Apple's iOS are the 2 leading stores and will therefore be discussed below:

Google Play: is the official store for Android operating system. Content wise, Google play store is the biggest mobile app store with 3.8 million apps as at February 2018 and a total of over 90 billion downloads (Statista The Statistic Portal, 2018). making it the most popular mobile app store in the world. 70 percent of the available apps on Google play store are free.

Apple iOS: is an online platform created and managed by Apple Inc for its operating systems. It makes the distribution and downloading of application developed for Apple iOS. The app store is active in both iPhone, iPod, iPad, Apple Smart Watch and Apple TV.

Content wise, Apple's app store is the second largest. It is home to over 2.2 million mobile apps with 60 billion downloads worldwide (Statista The Statistic Portal, 2018).

Choosing an App Store:

Deciding on where to publish your app is a tedious process that requires focus, considerations and sacrifice. Some of the factors to be considered while trying to publish an app according to Komlodi et al., (2007) includes but not limited to:

- platform characteristics: relative advantage innovativeness, potential security and technical compatibility
- Network externalities: market potential, market size
- Individual characteristics: personal benefits, enjoyment, knowledge
- Social interaction, social media and mass media

What children wants and doesn't?

Children are significantly different from majority of the designers of which are adults (Druin, 2002) likewise there needs also differs when it comes to mobile application. This needs have often been overlooked when it comes to development of new technologies (Dresang, Gross, & Holt, 2003). Which have made a lot of programs fails like mobile4girls in south Africa (Kline et al., 2014).

According to Komlodi et al., (2007) children needs the following in their mobile application

- Customization and Visualization of tools and materials example children want to have a choice on how to search (either by type or click visual icons) modify colors and graphic interface.
- They required special provision to share images and questions template where the needs may arise.
- Design in local language with images they are familiar with.
- Children found pop-up that are pornographic upsetting online although nothing was said with regards to pop-ups that are non-pornographic

Mobile Application Development Principles

Apps are now a mainstream trusted way to deliver content and services but in a crowded market, how does a mobile app become useful, relevant and valued so it delights and retain it uses. This leads to the idea of mobile development principles. Various studies have written extensively on these issues. Yet, there is no specific agreeable principle used, below are some of the principles:

- Cut out the cluster: make each navigation in an independent screen. Avoid merging multiple navigation into a single screen and at the same time remove whatever is not necessary.
- Make navigation self-evident: convenience and simplicity are great determining factors when trying to make consumers use your app. There is therefore the need to engage them with a smooth flow. which means key elements, buttons and icon should be clearly visible.
- Text content should be legible: clear to read and color contrast should be considered so also should font size.
- Make interface clearly visible: use color and contrast to make user see and interpret your content, small text contrast ratio 4.5: 1 against its background, large text (14 bold 18 point regular and up) with contrast ratio 3:1 against background.
- Design control base on hand position: research shows that 49 percent of mobile phone users use their thumps operate their smart phones, this therefore makes designing your app in such a way that commands are position well and made to be finger friendly.
- Minimize need to type: the screen of smart phones most often than not is relatively small therefore making the keyboard small as well. This may result in typing difficulty for a number of people. Therefore, to create a very good experience one need to limit the need for user to type unless were necessary.
- Test your design: app functionality and usability need to be tested for bugs. Likewise, user testing needs to be undertaken to access customer satisfaction.
- Respect the platform: while designing a native app, developers needs to consistently refer to the design guidelines of the platforms. Bearing in mind that the guidelines are constantly evolving.

The Proposed System

We aim to develop NEU_DLMA a digital literacy mobile application for children. The purpose of the app is to make the children of The Turkish Republic of North Cyprus to be resilient online and be able to make use of the online opportunities at minimum risk. Security is the primary target of this app so we therefore choose to design a native mobile application on android (android being the highest mobile operating system used in North Cyprus (Nawaila et al., 2018).

Android

Android is a platform comprising of a software development kit (SDK) and an operating system for handheld devices (Although we now have wear OS for watches, Android auto for cars and Android TV for television). Android was released in November 2007 by google an open source environment for mobile software developers, by Open Source Environment for mobile software developers, under the framework of Open Handset Alliance (Open Handset Alliance, 2011)

Android is a mobile operating system based on Linux kernel and other open source software's. Android facilitate developers to write in java C/C++ and other programming languages (Developers.andriod, 2018) and currently support smartwatch, cars, television as well as the usual tablet and smartphones.

The Android platform provides a custom-built virtual machine and the development environment in addition to the mobile operating system. for the applications to run on as well as acting as the middleware between code and operating system (Developers.andriod, 2018). For application development, Android facilitates the use of advanced network capabilities such as 3G, 4G and WLAN, engine for persistent storage, onboard SQL, a customized, and 3D and 2D graphic libraries. It also possesses the benefit of being customizable, open source and permit multitasking. Also, some development tools are free (Hsu, Rice, & Dawley, 2012).

Android apps are the most widely used app in the world (Statista The Statistic Portal, 2018). They can be downloaded from the official android market or other repositories. These

app are either free or at a small cost (Godwin-Jones, 2011). With its active monthly users exceeding a billion each month. Featuring over 3.3 million apps

Various researchers have tried to compare between mobile development environments. Among them are Hall & Anderson, (2008), where they compare iPhone operating system with that of android. With issues such as developer tools/support, ease of use and market base serve as the yardstick for comparison. They conclude that the most exciting platform is that of android. Which according to them is also the best in terms of enabling app developers produce new applications.

Jobe (2014) analyze the experience of app developers with regards to cross-platform or native application. He concludes that if there is going to be interaction between the app and the hardware, native apps are preferred otherwise, they tend to be similar.

Design Consideration

Before describing the design and implementation processes of DLMA_NEU it is of paramount importance we first discuss the limitation and challenges faced while developing the application. These challenges and limitations have impacted the design, development and implementation of DLMA_NEU.

For any online community to succeed special attention need to be given to usability (effectiveness and efficiency of the interaction) and sociability (quality or meaningfulness of interaction between members) (Preece & Shneiderman, 2011). We also take into account critical thinking and technical skills of the children. For instance, how effective are the with keyboard and mouse, their level of exposure to technology and technical vocabulary as well as their ability navigate complex instruction.

While designing the interface a huge consideration was placed on children cognitive abilities (Cooper, 2002; Bilal, 2002) where icon and names were used to show navigation across the app and the content will include a lot of videos and picture to compliment children with low reading skills.

Due to the needs of children, special consideration was also placed on visualization and customization of the application (Druin, 2005; Large, Beheshti, & Rahman, 2002). For instance, the images used and the application displayed. We also place high emphasis on

interaction between member-to-member and member-to-admin and vice versa by providing prompt reply (where necessary) to children with enquiries. And perhaps the most important consideration was that of children data and information safety.

System Architecture

The user registers his information after downloading, which immediately create a profile for the user. And will give him access to the home page. If the user is above 18 years, he will automatically be rejected. For those under 18 the has access to videos, text and can report abuse or potential abuse.

The developed DLMA_NEU architectural design is described in figure 4.1 and the system flow chart is shown in figure 4.2 below:

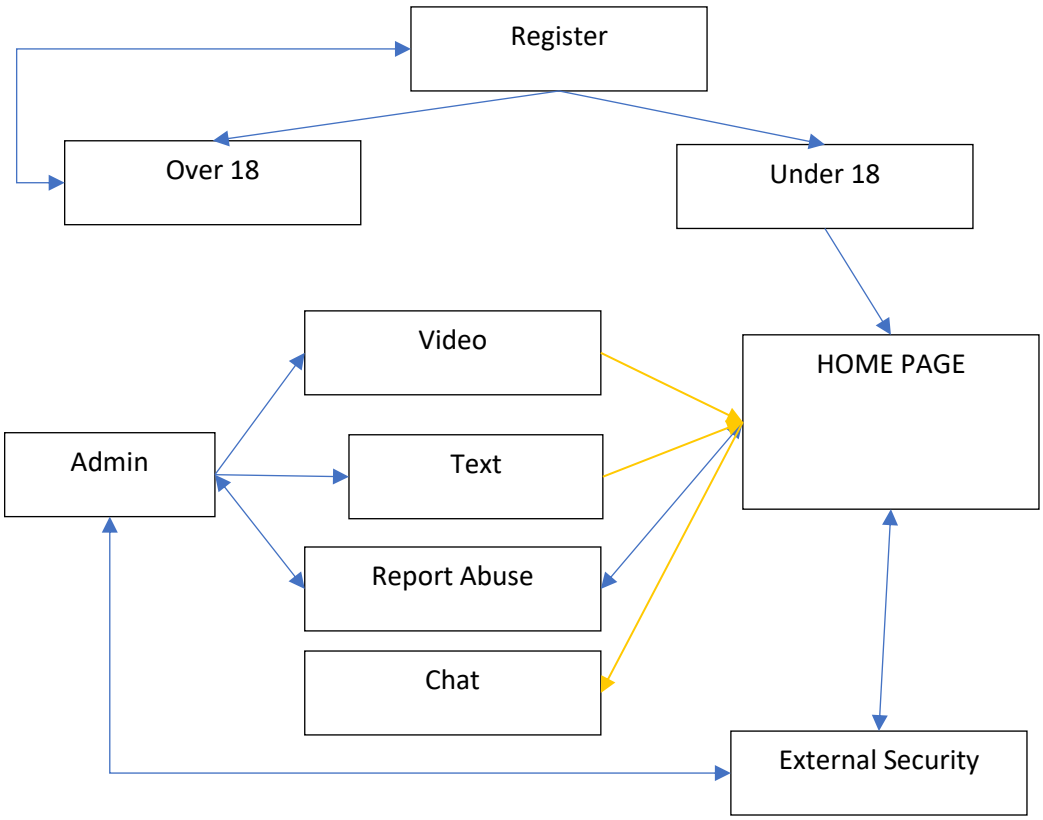


Figure 4. 1 DLMA_NEU System Architecture

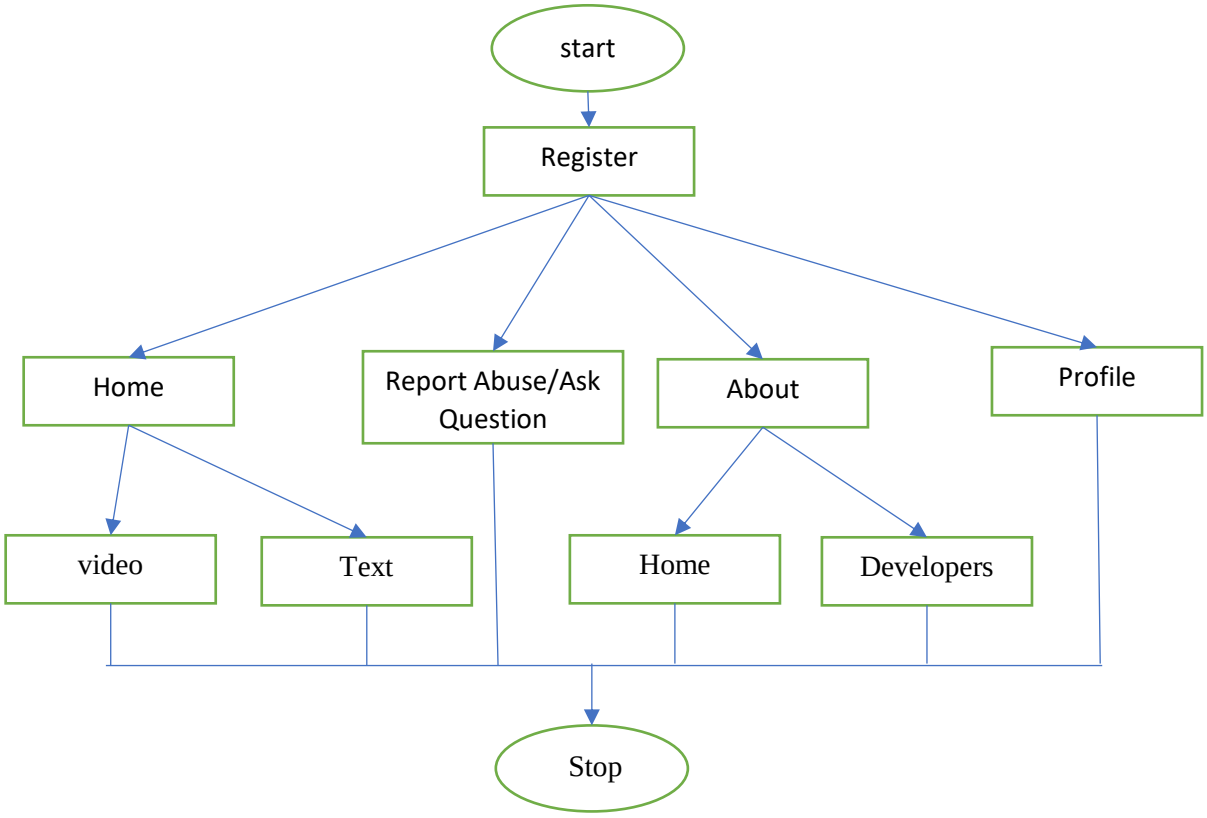


Figure 4. 2 Flow chart of the developed system

Software Development Life Cycle

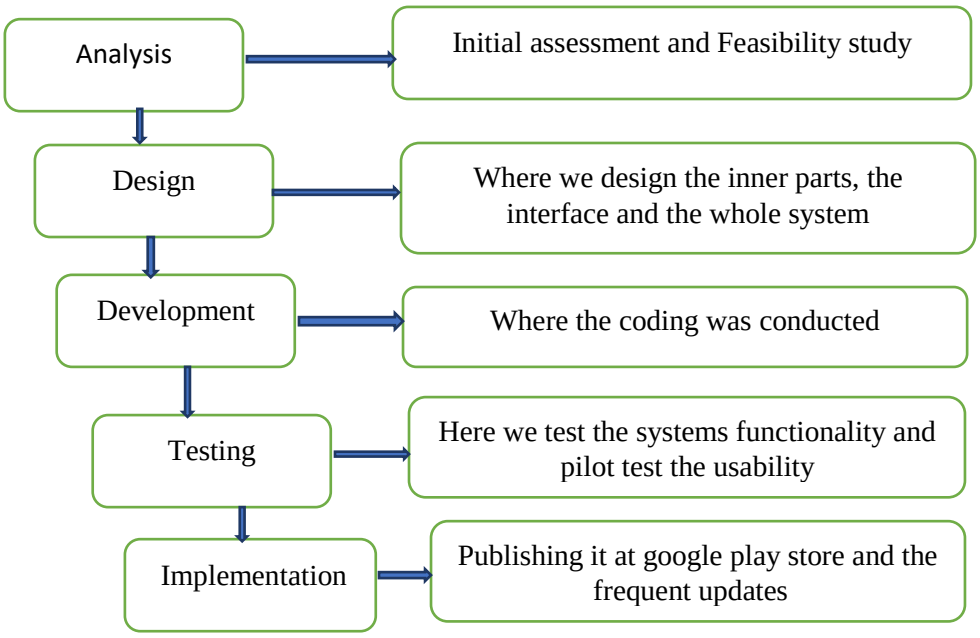


Figure 4. 3 Software development life cycle using waterfall model

Software development life cycle (SDLC): are steps followed by a software developer for a well-organized design, development and maintenance and to assure that requirement is meet with minimum resources and time. It comprises of five (5) stages notably, analysis, design, coding, testing and implementation. But to clearly explain the phases, software development models has t be employed. And for the purposed of this work waterfall model was employed. Because it is easy to use and manage and works well with small projects. The process is shown in figure 4.3 above

Planning

The ever-progressive nature of mobile application market and complexity of digital devices works together to make mobile application development an industry with huge potential, which is now becoming the mobile communication support system (Flora & Chande, 2013).

Users of mobile application now expect quality application both on content delivery and design which can be challenging as people are now highly dependent on these applications. Ensuring applications meet all their requirement with high quality formal reviews and intense testing are needed before delivering it to clients/users

The main objective of planning is to guarantee that innovative design requirement, mobile technology and product creation objectives are addressed accurately and conveyed to each team member (Flora, Wang, & Chande, 2014) for this reason we start with the application layout which incorporate user experience design, strategy planning and estimate planning.

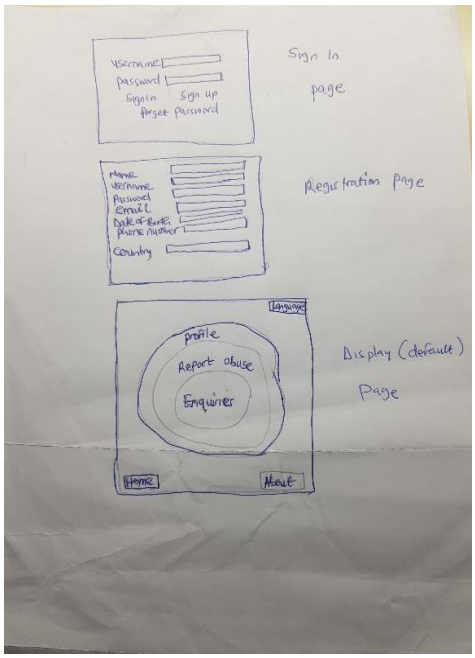
System Design and Development

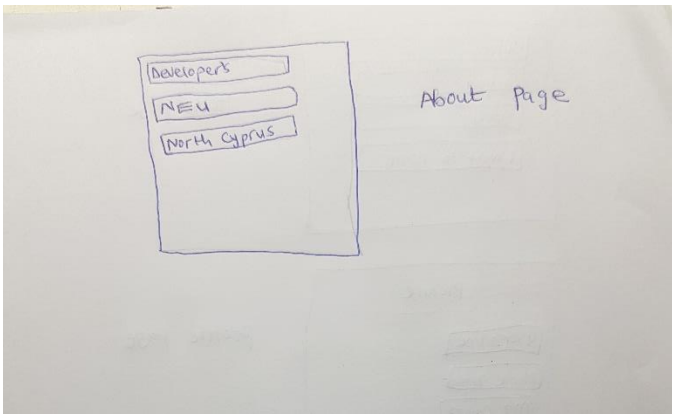
Mobile application Development is a complex process in itself that requires multiple developmental stages as well as steps, testing and implementation. According to Flora, Wang and Chande, (2014) “for the designers to provide an excellent solution, they should create simple design consuming as little resource as possible with associated appropriate basic architecture for the mobile app” the best method to achieve this according to some designers is to build a layered application. Where there would be consistent functionality across platform and at the same time meeting the feel and look requirement of each platform.

This stage creates the look and feel for users of the application, mockup screens and visual design view for the users, it also helps save times for the implementation stage. As proposed by Flora, Wang, and Chande, (2014) this stage contains; Architecture including the creation of initial mockups and prototypes, creation of the security and step models of the user interface as well as design specifications which include model level design.

Flora, Wang and Chande, (2014) emphasized that "To create a phenomenal mobile application one needs to begin by identifying the initiatives, goal, purpose, problem as well as the audience the application targets". To clearly present the conceptual idea, the idea was sketch on a piece of paper as recommended by Wong et al., (2012) with special thought given to display and screen layout, icons and menus. Making sure that pages didn't contain a lot of information as excessive information may make the pages cluttered with redundant information making it hard to focus or read considering smartphones screen size (Cavus & Ibrahim, 2017).

Chats where also added to the application as providing interaction in any mobile application that target children is of paramount importance (Park, Han, Park, & Cho, 2008), so also is an improved response time (Khaddage, Chonka, & Zhou, 2009).





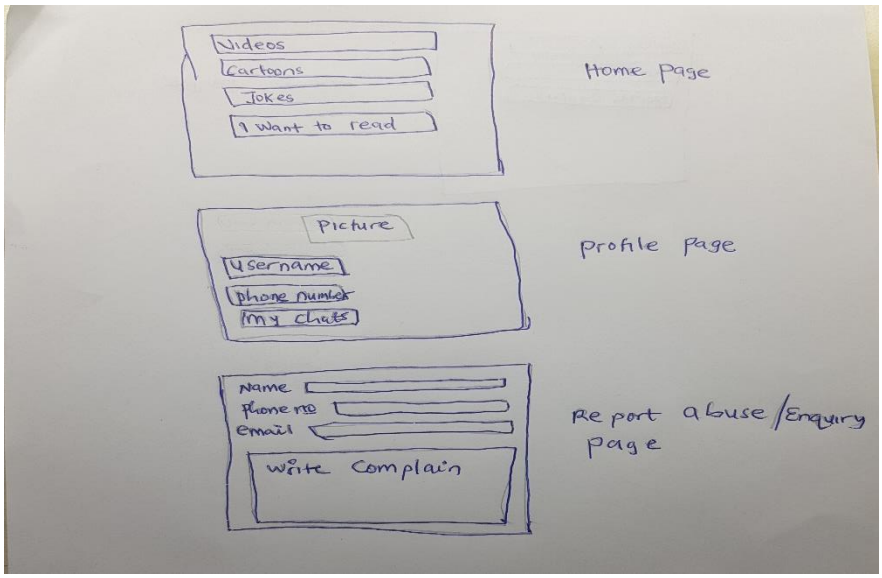


Figure 4. 4 Sketch of the DLMA_NEU

System Development and Testing

Mobile application development is in itself a herculean process that incorporate various stages and steps of coding, testing and maintenance. Immediately after the design stage, where clients and expert access and approve the design of DLMA_NEU presented. We start the development (coding) using the sprint based development (Williamson, 2012) which involve coding by splitting the application into modules as well as developing database and dashboard. Iterative testing was also conducted. Testing the code on an emulator where unit testing, bug fixing and intermediate release for client testing was carried out.

DMLA_NEU

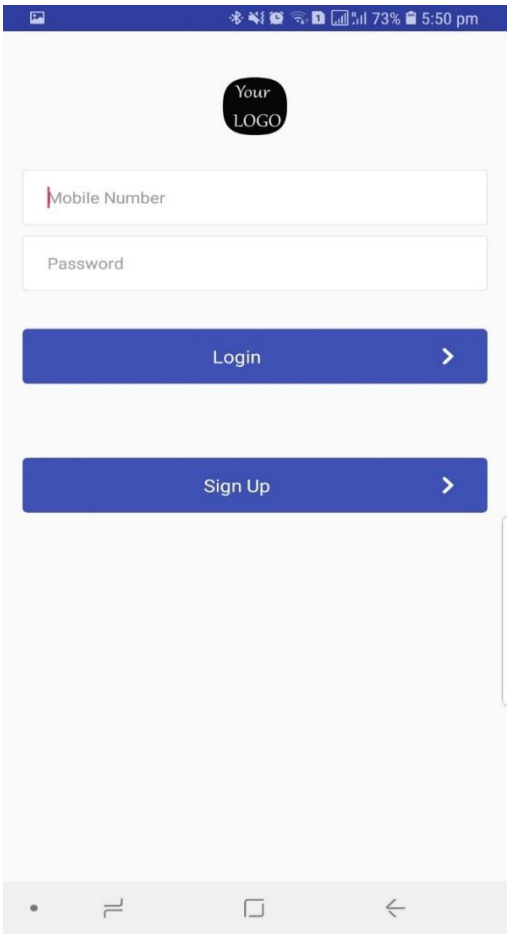
Is divided into two (2) parts the administrative dashboard and the client window.

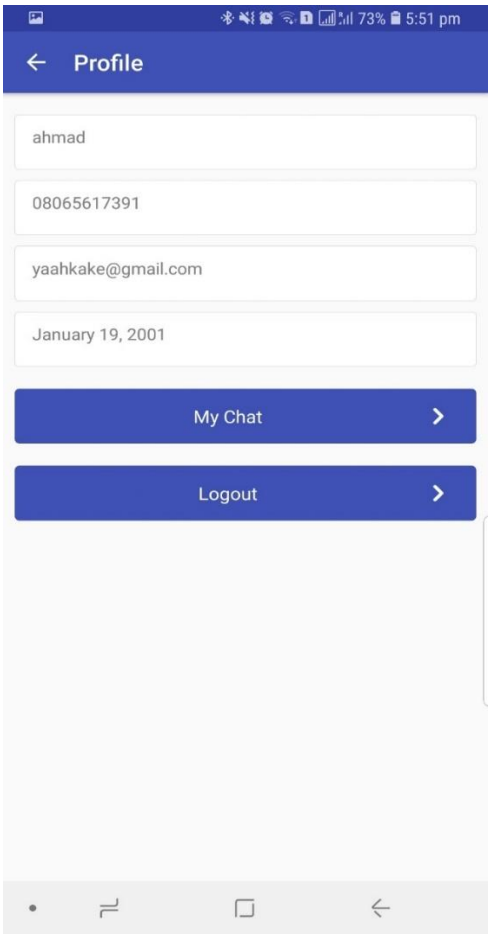
Client window (Initial Design)

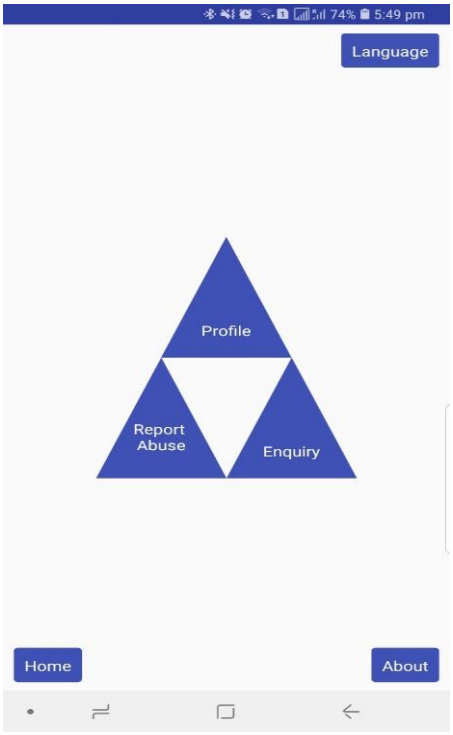
A user first encounters the registration window where he can either signup (for new users) or sign in for returning users. This will take him to the default page, where he can either select his profile (which will automatically take him to his profile page, chats, logout or back to the default page), Home (which transfer him to where he will either view videos,

cartoons, jokes or text about digital literacy), Report Abuse (where he can report problems he is encountering online), Enquiry (where he can ask questions and make enquires about digital literacy) or About (where he can read about developers, Near East University or TRNC).

Note that all videos, cartoons, jokes, will be send by the administrator via the admin page and reports and enquires will also be send to him.



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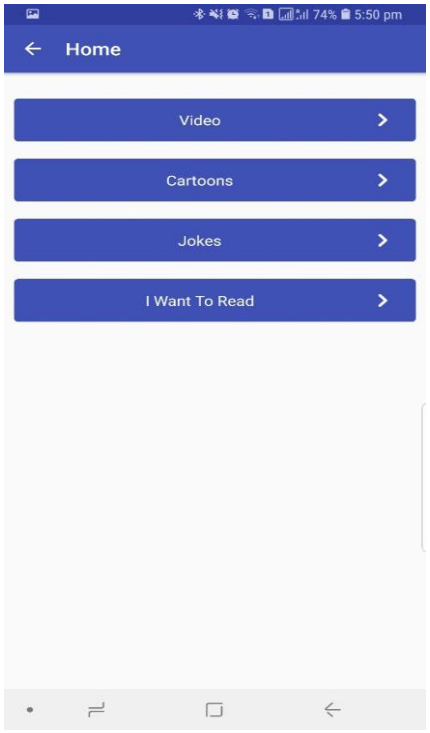
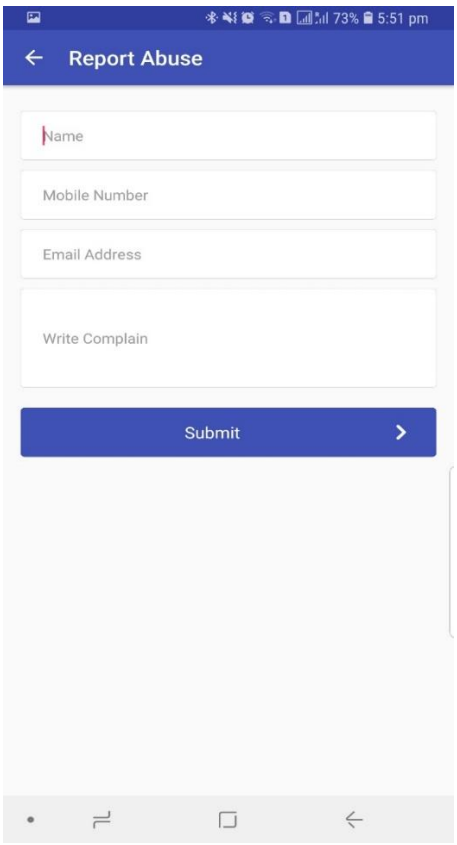
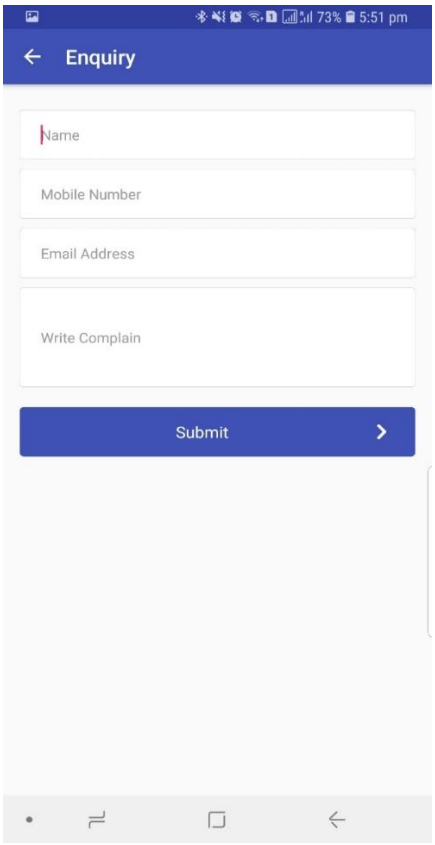
Home
About


74% 5:50 pm
Home
Video
Cartoons
Jokes
I Want To Read


73% 5:51 pm
Report Abuse
Name
Mobile Number
Email Address
Write Complain
Submit


73% 5:51 pm
Enquiry
Name
Mobile Number
Email Address
Write Complain
Submit

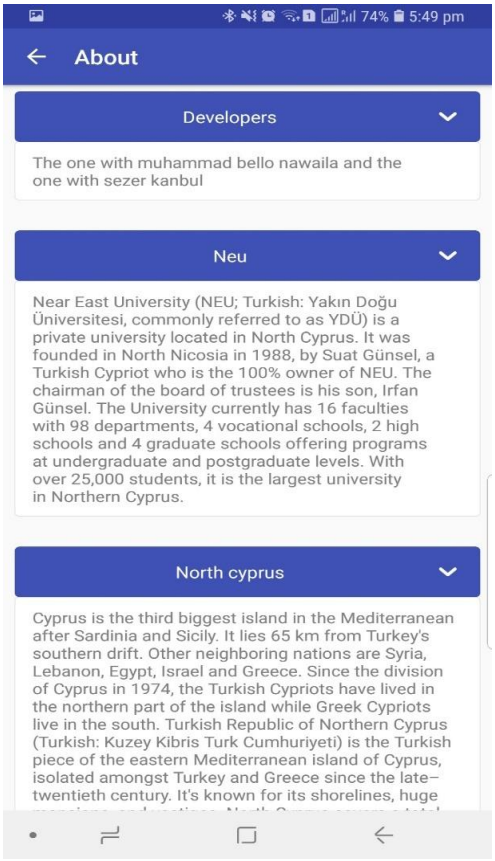


Figure 4. 5 Showing the view of client windows

Client window (Final Design)

The initial interface of the client window was later changed after multiple consultations with children and leading authorities in the field of educational technology, computer and human interaction and mobile application development.

All of the unanimously disapprove of the first interface as they believe it's too complex for children. One of the experts stated;

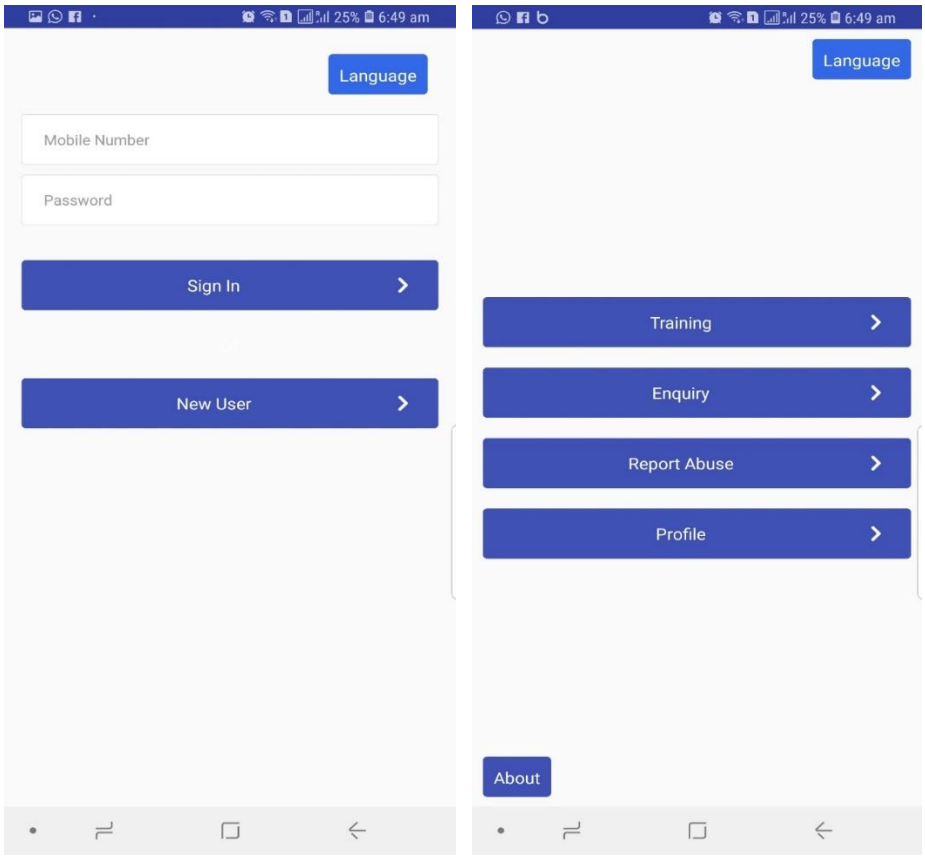
> "I think children will find this complicated for instance I don't think there is the need for a home key"

Another expert stated

> "I think its ok for thesis defense but to put it into practice the interface of the client window needs serious adjustment"

We therefore adjust the signin and signup page as well as the home page of the client

window as follows;



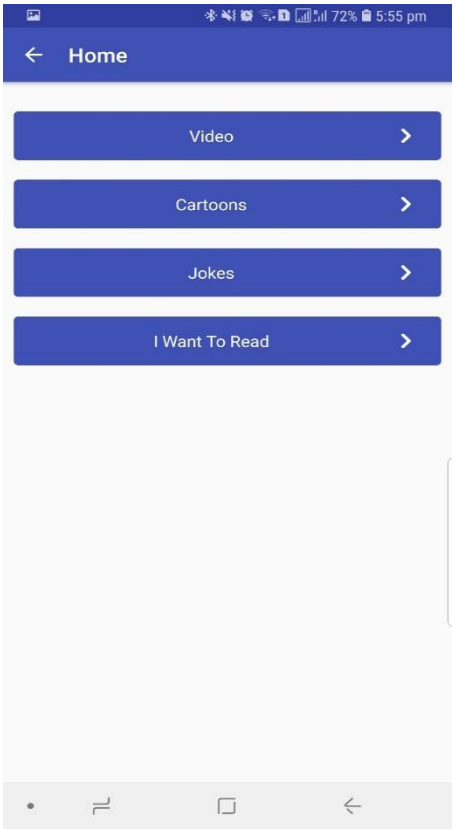
Administration Window

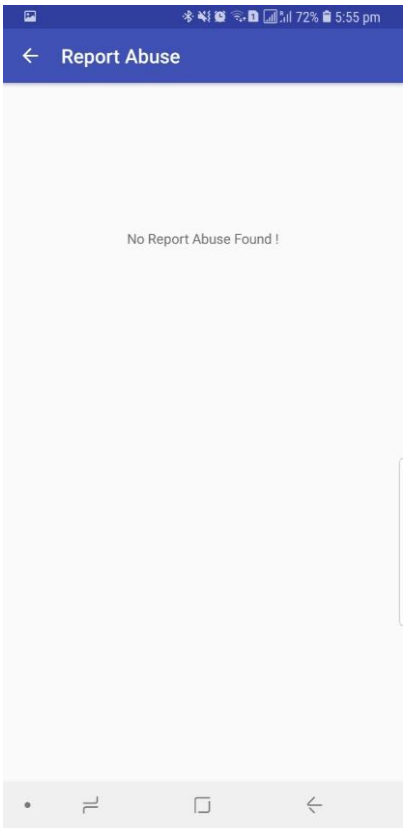
The administrator goes direct to the default page from there he can either go to home page (where he can send videos, texts, cartoons, plain text to the clients or go back to the default page), profile (where he can view the users list), Report Abuse (where he can view all complain send by the clients for onward action) or Enquiry (where he can see all the question asked by the client and if possible send answers)

It is worth noting that the DLMA_NEU employ the services of firebase live chat, firebase cloud (formally known as google cloud storage) for storage and firebase real time database and that DLMA_NEU was designed with children age between 9 to 18 years old.

Among the limitations of DMLA_NEU was that although only children 18 years and below can register, we cannot guarantee that only those age brackets do indeed register as any 40 years old can easily register by faking his date of birth.


72% 5:55 pm
Profile
Report Abuse
Enquiry
Home


72% 5:55 pm
Home
Video
Cartoons
Jokes
I Want To Read


72% 5:55 pm
Report Abuse
No Report Abuse Found !

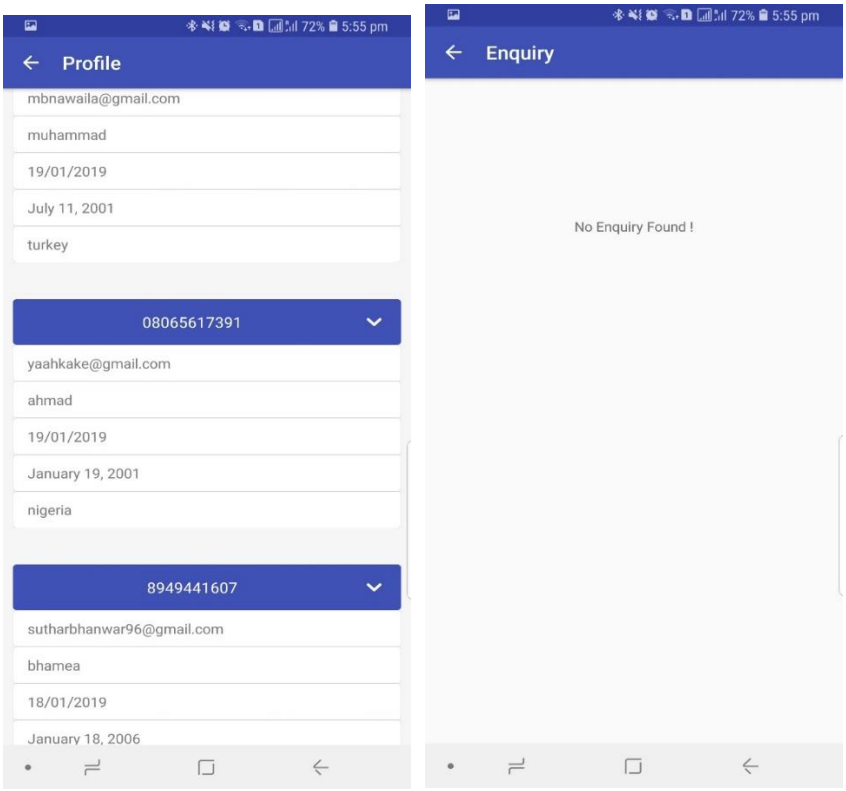


Figure 4. 6 Showing the view of client windows

CHAPTER V

DISCUSSION CONCLUSION AND RECOMMENDATION

Introduction

In this chapter we intend to present an elaborate discussion on the finding, conclude as well as presenting some recommendations.

Discussion

The utilization of digital devices and technologies is an integral part of children's daily lives. Despite the multiple opportunities associated to online environment, like communication entertainment and education, it has also been associated with various risks like cyberbullying and grooming. it is therefore important to access the level of risk, mediation and digital literacy among children as they form the most vulnerable part of the society and considering that those vulnerable offline are vulnerable online makes conducting this research even more important.

This study contributes significantly to the field of digital children's rights by designing, developing and validating TDCRS and the field of digital literacy by designing and developing DMLA_NEU a digital literacy mobile application.

The study presented shows that TDCRS is a reliable (with Cronbach's Alpha = 0.833) and valid measure for assessing digital children's rights.

Judging by the result there is very limited mediation both from parents and schools. But since parental mediation has been link to more risks online (van Schalkwyk et al., 2017), and online restrictions (adhered by policy makers) lead to only significantly minor reduction in children risk exposure (Duerager & Livingstone, 2012). Other means has to be employed to mediate the internet for children.

47% of the children confessed to engaging in cyberbullying, which is a huge number considering that multiple research has been conducted to access the debilitating effects of cyberbullying with results associating the children bullied with psychological distress, low self-esteem, depression and even suicide (Schneider, O'donnell, Stueve, & Coulter, 2012; Nielsen, Hetland, Matthiesen, & Einarsen, 2012; Cénat et al., 2014).

Another disturbing issue is that of sexting. Sexting is the transfer of nude pictures between individuals. Sexts gone wrong has in some cases lead to cyberbullying and ridicule and has lately attract media attention with multiple girls said to have lost their lives in order to avoid harassments, ridiculed and shamed after sexts they send are made public (Döring, 2014). Despite all these, children do not mostly refer to the term "sexting" they rather call it "picture exchange" or using explicit terms like receiving/sending dick/tits picture (Lumby & Funnell, 2011) and in the process downplaying the severity of the issue. Almost 47% percent of the children has at a time send sexts, which is a serious number and may be attributed to lack of digital literacy or the fact that sexts gone wrong does not frequently occur in North Cyprus.

Multiple skills have been deemed digital literacy by creating a border between the internet and user's everyday activities clearer (Simsek & Simsek, 2013; Choi, Glassman, & Cristol, 2017). Despite the vital role digital literacy played in the life of internet users, 60% of the respondents confessed to not having any formal digital literacy from school or at home.

Children would rather share what happened to them online with their friends with almost 60% of the children agreeing which agrees with Byrne, Kardefelt-Winther, Livingstone, and Stoilova, (2016) and has been attributed to the fear of parents restricting device use of the children. Although most children knew the friend can't actually do anything.

Risk and opportunities in an online environment are mostly synonymous, for instance spending more times online increase technical skills (Müller, Pfetsch, & Ittel, 2014) but at the same time can increase the possibility of cybervictimization and cyberbullying (Hinduja & Patchin, 2008). Although most students confess to only visiting age appropriate site, it was noted that majority of them are on Facebook when they are 10 years old even though Facebook targets 13 years and above (Macenaite, 2017).

It was noted that children engaged in less risky behaviors online and mostly when they do, it is because of high risk personality traits, peer pressure or just thoughtlessness. This requires urgent prevention which can be done by providing better digital literacy on the possible negative results of their actions and that being more tech-savvy than the victim does not totally exonerates them from risks

When it comes to income versus the internet, it was noted that children from higher income families acquire devices at a younger age compared to their less income family counterparts which agrees with Odgers (2018). But no significant difference was spotted when it comes to moderation which on the other hand counters Odgers (2018).

Another issue that will attract the attention is the fact that this children despite the school not providing formal digital literacy, are also not opportune to have informal digital literacy from home as they are allowed to navigate the internet without guidance

Other factors worth noting are, the bigger the class the older the children take before their first phone and since first phone has positive correlation with first social media account, it therefore implies that the longer it takes the student to open his first social media account and the less he has the source to connect to internet.

Conclusion

In order to reduce children's online risk as well as promotes online opportunities, provide digital literacy, mediation and internet safe use, it is imperative to acquire a stronger understanding of the digital children's rights; to tackle this as well as provide representation and provide voice to the millions of Turkish speaking children we developed (TDRS) a reliable and validated digital children's rights scale in Turkish and DMLA_NEU (which aimed at providing digital literacy to Turkish speaking children)

Hermes, (2006) states that the information age has brought forward different types of citizens with distributed responsibilities and different perspectives. Applying restricting online time as a means of preventing cybervictimization and cyberbullying is practically in feasible because of the digital nature of the children. This makes the development of means that will attract the interest of the children of very important.

DMLA_NEU is a mobile application that makes digital literacy fun and interesting by providing videos, audios, cartoons and text about how to behave online and at the same time incorporating chats. It also serves as an avenue for children to complain about unwanted activities they encountered online. Children can also ask questions about online behaviors as DMLA_NEU serve as a mentor and a guide to Turkish children.

When children engage in sexting it is mostly because of high-risk personality traits, peer-pressure or thoughtlessness. Which implies children need better digital literacy with specific focus on negative consequence of sexting

The data of this study are collected from private colleges of TRNC and therefore caution should be exercised while trying to interpret the findings as samples might not be a total representation of all the children. For instance, device availability and internet provision may differ between private and public schools as well as their students.

In various countries around the world children has the tendencies of going online at an ever-younger age but most often than not, children obsessed with spending much of their time online often suffer later in life of social experience (Kalmus, Blinks & Olaffson, 2015). It is therefore paramount that policy makers, researchers and societies at large develop how to moderate these online activities and at the same time striking a balance where children are allowed to go online to satisfy their needs without children engaging in excessive internet use. One thing is certain the children of north Cyprus lack any form of digital literacy.

Recommendation

We recommend teachers, parents/guidance and policy makers encourage children to frequently use DMLA_NEU as digital literacy has the ability to reduce risk.(Döring, 2014), and at the same time we will recommend applying TDRS to students of public school and non-school children. As they will provide another dimension because of the possibility of sharing devices or non-payment of internet services

It is vital that the policy makers ensure that internet opportunities provided does not increase the already existing digital divide we will therefore recommend accessing the digital divide in TRCN

To design an all nurturing, stimulating, inclusion and safe digital environment there is the need for designers to understand the diverse background of children and their experiences online (Odgers, 2018). We therefore recommend conducting a research that link the environmental and societal factors to internet usage habits.

There is a paucity of research on parental internet mediation with special reference to those that tries to evaluate it effectiveness, even in the global north (Kalmus, Blinka, &

Ólafsson, 2015). Likewise, parental mediation as the act of parents interacting with children on media use but little is known on how certain factors like neighborhood or cultural norms affect children internet usage habits, risks and parental mediation

We also recommend building similar app for adults and at the same times recommend conducting research to access the influence of DMLA_NEU on children's internet usage habits.

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APPENDICES

APPENDIX A:

Ethics Approval Form

YAKIN DOĞU ÜNİVERSİTESİ

BİLİMSEL ARAŞTIRMALAR ETİK KURULU

1.11.2018

Dear Muhammad Bello Nawaila

Your application titled **"Digital Child Rights: A TRNC Viewpoint"** with the application number YDÜ/EB/2018/93 has been evaluated by the Scientific Research Ethics Committee and granted approval. You can start your research on the condition that you will abide by the information provided in your application form.

Assoc. Prof. Dr. Direnç Kanol

Rapporteur of the Scientific Research Ethics Committee

Direnc Kanol

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

APPENDIX B:

Turkish Digital Right Scale (TDRS)

Katılımcı Bilgilendirme ve Bilgilendirilmiş Onam Formu

Değerli Öğrenci,

Bu ölçek, Kuzey Kıbrıs Türk Cumhuriyetinin çocuklarının dijital dünyada haklarını nasıl gördüklerini/anladıklarını anlamak için yürüttüğümüz bir araştırma çalışmasının bir parçasıdır. Bu ölçek üzerinden toplanan veriler, kolej çocuklarının karşılaştığı riskleri, onların güvenlik açıklarını, internet erişim yöntemini, sık ziyaret edilen siteleri, günlük internet erişim süresini, hem okuldaki hem de evde ve arasındaki süreçte interneti nasıl sağladığını anlamak için kullanılacaktır. Bu bağlamda anketi doldurarak katılım göstermeyi otomatik olarak kabul etmiş olursunuz.

Lütfen çalışmaya katılmanızın gönüllü olduğunu ve kimliğinizin üçüncü şahıslara açıklanmayacağını unutmayın. Bu çalışma süresince toplanan veriler sadece akademik araştırma amaçlı kullanılacaktır ve ulusal / uluslararası akademik toplantılarda ve / veya yayınlarda sunulabilir. Ankete cevap vermeyi reddederek veya çok kişisel olduğunu düşündüğünüz herhangi bir soruyu atlayarak bu çalışmaya katılabilirsiniz. Çalışmayı devre dışı bırakırsanız, verileriniz veritabanımıza kaydedilmeyecek ve çalışmanın diğer kademelerine dahil edilmeyecektir.

DİJİTAL ÇOCUK HAKLARI ÖLÇEĞİ

Sevgili Çocuklar;

"**Dijital Çocuk Hakları**" bir başka deyişle "**Çevrimiçi Haklar**", 0-18 yaşındaki bireylerin dijital ortamda bilgiye erişme, içerik oluşturma ve bu içeriği yayma haklarını ifade eder. Terim özellikle internet bağlamında gizlilik, ifade özgürlüğü gibi mevcut hakların korunması ve gerçekleştirilmesiyle ilgilidir.

"Dijital Ortam" ise akıllı telefon, tablet, bilgisayar, laptop... vb. gibi araçlar aracılığı ile **internet** üzerinden bağlandığınız tüm platformlardır (Tüm siteler, WhatsApp, Facebook, Youtube... vb.).

NOT: "**Birleşmiş Milletler Çocuk Hakları Sözleşmesi**"ne göre 18 yaşından küçük herkes **çocuk**tur.

Uzm. Muhammad Bello NAWALIA & Yard.Doç.Dr. Sezer KANBUL

KİŞİSEL BİLGİLER

1) Cinsiyetiniz?
Kız ( ) Erkek ( )

2) Yaşınız?
.....

3) Sınıfınız?
.....

4) Gelir Düzeyiniz?
2500TL ve aşağısı ( )
2500TL – 3500TL ( )
3500TL – 4500TL ( )
4500TL - yukarısı ( )

5) Kardeş sayısı (varsa)?
.....

6) İlk telefon size kaç yaşında alındı?
.....

7) İlk sosyal medya hesabınızı (facebook vb.**) kaç yaşında aldınız?**

.....

8) Hangi sosyal medya ağlarına üyeliğiniz var? *(Birden fazla seçenek işaretleyebilirsiniz)*
( ) Facebook
( ) Twitter
( ) Instagram
( ) Linkedin
( ) Youtube
Diğer (yazınız).....

9) İnternete erişimini daha çok hangileri ile sağlıyorsunuz?
(Birden fazla seçenek işaretleyebilirsiniz)
( ) Kablolu
( ) Koblosuz
( ) ADSL
( ) Uydu
( ) 3g
Diğer (yazınız).....

7) Aşağıdakiler cihazlardan hangilerine sahipsiniz? *(Birden fazla seçenek işaretleyebilirsiniz)*

( ) Akıllı telefon
( ) Tablet
( ) Masaüstü
( ) Dizüstü
( ) Diğer (yazınız).....

NO	ÖLÇEK MADDELERİ	Kesinlikle katılıyorum	Katılıyorum	Kararsızım	Katılmıyorum	Kesinlikle Katılmıyorum
		5	4	3	2	1
1	Dijital ortamda kendi gelişimime yönelik araştırma yapıyorum.					
2	Öğretmenimle sosyal ağlar üzerinden iletişime geçebiliyorum.					
3	Dijital araçların ne zaman ve nasıl kullanılacağı sorumluluğuna sahibim.					
4	Dijital ortamda cinsiyet eşitliği olduğunu düşünüyorum.					
5	Dijital ortamlar sayesinde sınırların daha da ortadan kalktığını düşünüyorum.					
6	Okulumuzda herkesin eşit kullanabileceği sayıda bilgisayar bulunmaktadır.					
7	Dijital ortamda beni rahatsız eden şeyleri rapor ederim.					
8	Öğretmenimin e-mail adresini biliyor ve gerekirse iletişime geçebiliyorum.					
9	Dijital ortamda zaman zaman argo kelimeler kullandığım olmuştur.					
10	Okulumuzdaki dijital araçları özgürce kullanabiliyor ve bu araçlar sayesinde kendimi özgürce ifade edebiliyorum.					
11	Dijital ortamda işlenen suçlar ve yapılan haksızlıklara karşı şikayet hakkımı kullanabiliyorum.					
12	Evimizde kullandığımız interneti aldığımız şirketin sunduğu hizmet kalitesinden memnun değilim.					
13	Dijital ortam aracılığıyla sosyal, politik, kültürel veya başka nedenler için özgürce diğer insanlarla bir araya gelebiliyorum.					
14	Okulumuzda dijital araçları kullanırken kişisel güvenliğimin sağlandığını düşünüyorum.					
15	Diijital ortamda güvenli internet sayfalarından alışveriş yapabiliyorum.					
16	Dijital ortamda zaman zaman kışkırtıcı şiddet söylemleri ve görselleri ile karşı karşıya kalabiliyorum.					
17	Dijital ortamda tanımadığım insanlarla iletişim kurup tanıştığım olabiliyor.					
18	Ailemin dijital oyun oynama hakkıma saygı duyduğunu düşünüyorum.					
19	Dijital ortamda zaman zaman nefret söylemleri ve görselleri ile karşı karşıya kalabiliyorum.					
20	Sansür veya herhangi bir başka müdahale olmadan dijital ortamda serbestçe bilgi arama, alma ve açıklama hakkımı kullanabildiğimi düşünüyorum.					
21	Okulda zaman zaman uygun olmayan siteleri açtığım olabiliyor.					
22	Telif hakkının ne anlama geldiğini biliyorum.					
23	Dijital ortamda zaman zaman cinsellikle ilgili içerikler ile karşı karşıya kalabiliyorum.					
24	Okulumuzda herkes eşit miktarda internet bağlantısı bulunmaktadır.					

25	Okulumuzda ders saatleri dışında bilgisayar laboratuvarları herkesin eşit kullanıma açık tutulmaktadır.					
26	Derslerimizde dijital araçlardan projeksiyon kullanabiliyorum.					
27	Ödevlerimi yaparken zaman zaman kopyala-yapıştır yaptığım olmuştur.					
28	Derslerimizde dijital araçlardan akıllı tahta kullanabiliyorum.					
29	Okulun kaynaklarını kullanarak zaman zaman yasa dışı aktivitelerde bulunduğum olmuştur.					
30	Dijital ortamda uygun takma adlar kullanıyorum.					
31	Sadece yaşıma uygun ve bu konuda bilgi içeren web sitelerini ziyaret ederim.					
32	Dijital ortamdaki arkadaşlarımı gerçek hayatta iletişim kurduğum, tanıdığım kişilerden seçerim.					
33	Paylaşımlarımı sadece beni tanıyan kişiler tarafından görülebilmesi için gerekli düzenlemeyi yaparım.					
34	Dijital ortamda uygun içerikleri ve fotoğrafları paylaşırım.					
35	Öğretmenimiz internetten ödev vererek dijital ortam kullanımını teşvik eder.					
36	Dijital ortamda yaşadığım iyi ya da kötü şeyleri annemle paylaşırım.					
37	Zaman zaman kışkırtıcı iletiler yazarak uygun olmayan yazıları bir başkasına iletirim.					
38	Dijital ortamda görüşlerimi serbestçe ifade ederim.					
39	Okulumuzda güvenli internet kullanımı ile ilgili etkinlikler düzenlenir.					
40	Ailem dijital ortam üzerinde edindiğim arkadaşlıklarımı takip eder.					
41	İnternete erişim için gerekli olan altyapı teknolojilerinden olabilecek en az bedeller karşılığında faydalandığımı dünüyorum.					
42	Dijital ortamda yaşadığım iyi ya da kötü şeyleri arkadaşımla paylaşırım.					
43	Ailem uygun içerikli fotoğraflar paylaşmam konusunda beni sürekli uyarır.					
44	Dijital ortam insani etkileşim ve sosyal ilişki için temel bir platformdur.					
45	Dijital ortamda yaşadığım iyi ya da kötü şeyleri öğretmenimle paylaşırım.					
46	Ailemden habersiz internet üzerinden alışveriş yaparım.					
47	Zorbalık ve kabalık içeren konuşmalara dâhil olmam.					
48	Dijital ortamda duygu ve düşüncelerimi istediğim şekilde açıklayabilirim.					
49	Dijital ortamda yaşadığım iyi ya da kötü şeyleri babamla paylaşırım.					
50	İnternet bugün, düşünce ve ifade özgürlüğünün gerçekleştiği öncelikli iletişim alanıdır.					
51	Bugün bir insanın seyahat özgürlüğü engellenemeyeceği gibi, internet erişimi de engellenemez.					
52	Güvenli internet kullanımına yönelik filtreleme, kısıtlama ve kontrol etme yazılımlarını kullanırım.					
53	Ailem dijital ortamda geçirdiğimiz vakte beni de dahil etmeye çalışır.					
54	Özgür ve sınırsız bir internet her kullanıcının hakkıdır.					
55	İnternettte bir sıkıntı olursa yasal haklarımı bilmiyorum.					
56	Annem ve babam dijital ortamlar hakkında ortak dilde konuşurlar.					
57	Dijital ortamdaki verilerimin korunması için cihazlarımda antivirüz yazılımları kullanırım.					
58	Evimizde hangi cihazın ne kadar kullanılacağı karara bağlanmıştır.					

59	Dijital ortamda sansür internet kullanıcılarının bilgiye erişim hak ve özgürlüğünü ihlal eder.					
60	Ailem dijital dünya hakkında da benimle iletişim halindedir.					
61	Ailem çevrimiçi ortamda neler yaptığımı ve kimlerle etkileşime geçtiğim hakkında benimle konuşur.					
62	Evimizde ailemize özgü uyulacak kurallar ve dijital ortamsız zamanlar belirlenmiştir.					
63	Dijital teknolojileri kullanarak başka kişilerle iletişime geçebilirim.					
64	Okulumuzun cep telefonu kullanımı ile ilgili kuralları vardır.					
65	İnternet üzerindeki kullandığım hesaplarıma zor şifreler koyarım.					
66	Dijital ortamda din ve inanç özgürlüğümü açıkça ifade edebilirim.					
67	Çevrimiçi alışverişin faydalarının farkında olduğum kadar çıkabilecek problemlerin de farkındayım.					
68	Adamız genelinde internet bağlantısının iyi olduğunu düşünüyorum.					
69	Okulumuzda dijital ortam kullanımı için konulmuş kural, politika ve kanunlar vardır.					
70	Dijital ortamda zaman zaman ırkçı söylemler ve görseller ile karşı karşıya kalabiliyorum.					
71	Dijital ortamda bir siteye üye olurken karşıma çıkan sözleşmeleri gerçekten okuduktan sonra kabul ederim.					
72	Dijital ortamda zaman zaman kendi videolarımı uygun bir şekilde paylaşırım.					

APPENDIX C:

Turkish Digital Right Scale (TDRS) (Translated to English)

Participant Information Sheet and Informed Consent Form

Dear Participant,

This scale is part of a research study that we are carrying out in order to understand how children of the Turkish republic of Northern Cyprus understand their right in the digital world. The data collected through this scale will be used to understand the risk faced by college children online, their vulnerabilities, the internet access method, frequent site visited, daily internet access duration, internet availability in both school and at home and mediation. And by filling the questionnaire you automatically agree to participate.

Please note that your participation in the study is voluntary and your identity will not be revealed in any case to third parties. The data collected during the course of this study will be used for academic research purposes only and may be presented at national/international academic meetings and/or publications. You can quit participating in this study at any time by refusing to respond to the questionnaire or skip any question you deem too personal. If you opt out of the study, your data will not be recorded in our database and will not be included in any further steps of the study

DIGITAL CHILDEN'S RIGHTS SCALE

Dear Children;

Digital Children's Rights, in other words, Online Child Rights means the right of 0-18-year-old individuals to access, create and disseminate information in digital media. The term is particularly concerned with the protection and realization of existing rights such as privacy, freedom of expression in the context of the Internet. Means for accessing digital media includes laptop, smartphone, tablet, desktop ... etc. (and all sites, WhatsApp, Facebook, Youtube ... etc).

NOTE: According to the United Nations Convention on the Rights of the Child, anyone under 18 years of age is a child.

Ma. Muhammad Bello NAWALIA & Asst. Prof. Dr. Sezer KANBUL

PERSONAL INFORMATION

1) your gender?
Girl ( ) boy ( )

2) What is your age?
.....

3) Class?
.....

4) Your Income Level?
2500TL and below ()
2500TL – 3500TL ()
3500TL - 4500TL ()
4500TL - Above ()

5) Number of siblings (if any)?
.....

6) How old was your first phone?
.....

7) How old were you when you register for your first social media account (facebook, etc.)?
.....

8) Which social media networks do you have? (You can select more than one option)
) Facebook
( ) Twitter
( ) Instagram
( ) LinkedIn
( ) YouTube
Other (write) .....

9) Which do you provide more access to the Internet? (You can select more than one option)
() Wired
() Wireless
() ADSL
() Satellite
() 3g
Other (write) .....

10) Which of the following devices do you have? (You can select more than one option)
( ) Smart phone
() Tablet
( ) Desktop
() Laptop
() Other (write) .....

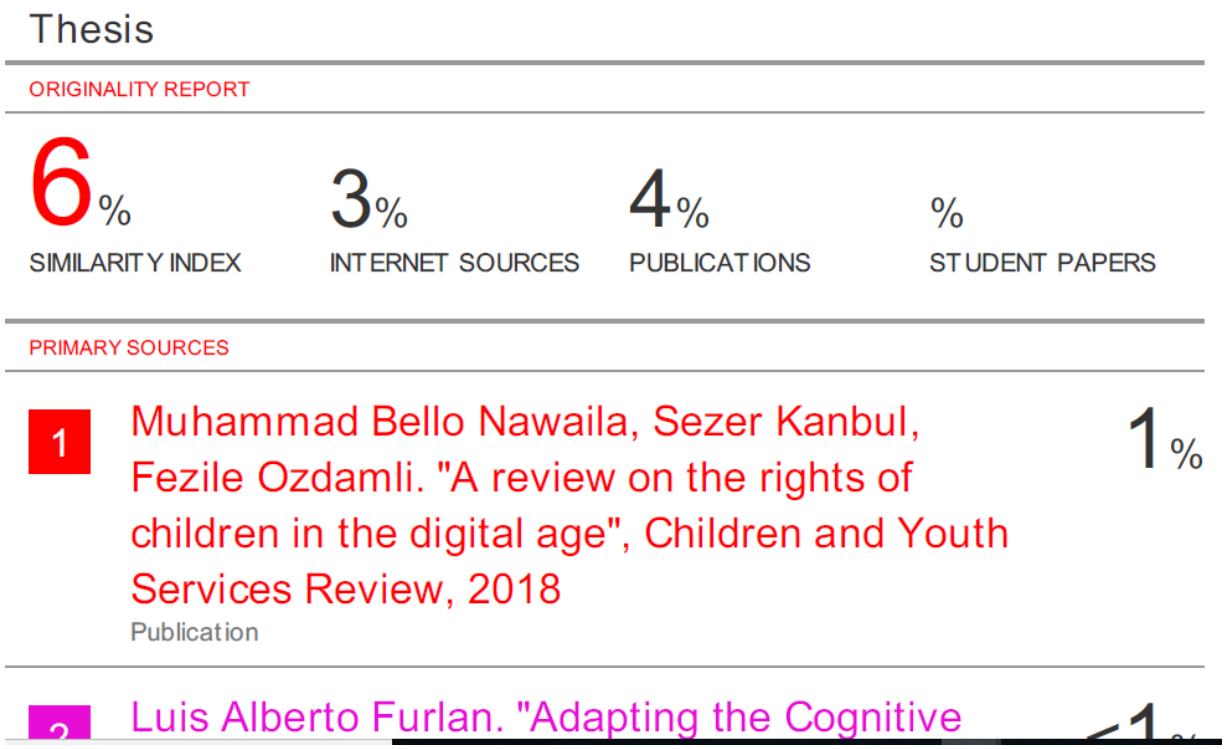
NO	SCALE MATERIALS	Strongly Agree	Agree	Neutral	Disagree	Strongly Agree
		5	4	3	2	1
1	I conduct personal research in digital environment.					
2	I communicate with my teacher through social networks.					
3	I am responsible for when and how to use the digital tools.					
4	I think there is gender equality in the digital environment.					
5	Thanks to digital media, I think the boundaries have disappeared.					
6	Our school has enough computers for everyone to use equally.					
7	I report things that bother me in a digital environment.					
8	I know my teacher's e-mail address and can contact when necessary.					
9	I use slang words occasionally in digital environment.					
10	I can freely use the digital tools in our school and I can express myself freely through these tools.					
11	I know my right in digital environment and can complain against crimes committed in digital media.					
12	I am not satisfied with the quality of service offered by the company we use in our house.					
13	Through digital environment, I can freely meet other people for social, political, cultural or other reasons.					
14	I think my personal safety is ensured when using digital tools in our school.					
15	I shop on secure internet pages in digital environment.					
16	From time to time, I encounter provocative, violent discourses and visuals in the digital environment.					
17	I communicate and meet people I only know through digital environment.					
18	I think my family respects my right to play digital games.					
19	From time to time, I encounter hate speeches and visuals in the digital environment.					

20	I think that I can use my right to search, receive and review information freely in digital environment without censorship or any other intervention.					
21	At times, I access unsuitable sites at school.					
22	I know what copyright means.					
23	From time to time, I am encounter pornographic images and videos.					
24	Everyone in our school has an equal amount of internet connection.					
25	In our school, computer labs are kept open to all students at all times.					
26	My teachers use projection for lessons.					
27	I copy-and-paste from time to time while doing my homework.					
28	My teachers use smart board for lessons.					
29	Sometimes I got involved in illegal activities using the school's resources.					
30	I use appropriate aliases in the digital environment.					
31	I only visit websites that are age-appropriate and have relevant information.					
32	I choose my friends in the digital environment from people I know in real life.					
33	I adjust my setting that my shares can only be seen by my friends.					
34	I share appropriate content and photos in digital media.					
35	Our teacher encourages the use of digital media by giving homework on the internet.					
36	I share with my mother the good or bad things that I encounter in a digital environment.					
37	I occasionally write provocative messages and inappropriate texts to people in digital environment.					
38	I express my views freely in a digital environment.					
39	In our school, activities related to safe internet use are organized.					
40	My family follows me on digital media.					
41	I make sure i acquire devices at the least possible cost					
42	I share with my friend the good or bad things that I encounter in the digital environment.					
43	My family constantly warns me about sharing appropriate photos.					
44	Digital media is an essential platform for human and social interactions.					
45	I share with my teacher the good or bad things that I encounter in a digital environment.					
46	I shop online without my family’s knowledge.					
47	I'm involve myself in cyberbullying and vulgar conversations.					
48	I can explain my feelings and thoughts in the way that I want online.					

49	I share with my father the good or bad things that I encounter in the digital environment.					
50	The Internet is the primary communication medium where freedom of thought and expression take place.					
51	I think internet access cannot be prevented.					
52	I use filtering, restriction and control software for safe internet usage.					
53	My family encourage me to go online.					
54	Free and unlimited Internet is the right of every user.					
55	I don't know my legal rights if there's a problem on the Internet.					
56	My parents talk in a common language about digital media.					
57	I use antivirus software on my devices to protect my digital data.					
58	It is decided which device is used in our house.					
59	Censorship in digital environment violates the right and freedom of access to information from internet users.					
60	My parents use goes online most of the time.					
61	My family speaks to me about what to do online and who I should interacting with online.					
62	The rules for internet usage at home are decided and complied by my parents.					
63	I can contact other people using digital technologies.					
64	Our school has rules regarding the use of mobile phones.					
65	I put difficult passwords on my online accounts.					
66	I can express my freedom of religion and belief in a digital environment.					
67	I am aware of the problems that may arise as much as I am aware of the benefits of using the internet.					
68	I think the internet connection is good across my area.					
69	Our school has rules, policies and laws for the use of digital media.					
70	From time to time I encounter racist discourses and visuals online.					
71	I accept the website conditions when I am a trying to register for membership after reading.					
72	I share my videos appropriately in the digital environment.					

APPENDIX D

Turnitin Report



Thesis

ORIGINALITY REPORT

6%	3%	4%	%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	Muhammad Bello Nawaila, Sezer Kanbul, Fezile Ozdamli. "A review on the rights of children in the digital age", Children and Youth Services Review, 2018 Publication	1%
2	Luis Alberto Furlan. "Adapting the Cognitive	<1%