8-2017

The Extent of Comprehension and Knowledge with Respect to Digital Citizenship Among Saudi Arabia Teachers

Abdullah Saif Alqahtani
University of Northern Colorado

UNIVERSITY OF NORTHERN COLORADO

Greeley, Colorado

The Graduate School

THE EXTENT OF COMPREHENSION AND KNOWLEDGE WITH RESPECT TO DIGITAL CITIZENSHIP AMONG SAUDI ARABIA TEACHERS

A Dissertation Submitted in Partial Fulfillment
of the Requirements of the Degree of
Doctor of Philosophy

Abdullah Saif Alqahtani

College of Education and Behavioral Sciences
Department of Educational Technology

August 2017

This Dissertation by: Abdullah Saif Alqahtani

Entitled: *The Extent of Comprehension and Knowledge with Respect to Digital Citizenship Among Saudi Arabia Teachers*

has been approved as meeting the requirement for the Degree of Doctor of Philosophy in College of Education and Behavioral Sciences, in Department of Educational Technology

Accepted by the Doctoral Committee

_____
Mia Williams, Ph.D., Research Advisor

_____
Christine Kyser, Ed.D., Committee Member

_____
Randy Larkins, Ph.D., Committee Member

_____
Hyun J. Kang, Ph.D., Faculty Representative

Date of Dissertation Defense _____.

Accepted by the Graduate School

_____
Linda L. Black, Ed.D.
Associate Provost and Dean
Graduate School and International Admissions

ABSTRACT

Alqahtani, Abdullah Saif. *The Extent of Comprehension and Knowledge with Respect to Digital Citizenship Among Saudi Arabia Teachers*. Published Doctor of Philosophy dissertation, University of Northern Colorado, 2017.

This study aimed at exploring the extent of comprehension and knowledge of digital citizenship among Saudi Arabia teachers. A mixed methods research design was chosen for this study in order to identify the scope and perceptions of digital citizenship awareness among Saudi Arabia teachers based on Ribble's characterization of respect, educate, and protect and the concurrent triangulation research design to collect both qualitative and quantitative data. Specifically, this study focused on investigating how demographic characteristics such as gender, grade level of teaching, and years of experience could influence the perceptions of Saudi teachers with regard to digital citizenship awareness through the semi-structured interviews and an online survey to gather qualitative and quantitative information. Interview results demonstrated teachers' perceptions of digital citizenship and awareness of such factors as respect, educate, and protect according to Ribble's categorization. Four male teachers answered the questions about their knowledge of digital citizenship. There were also statistically significant findings on digital citizenship and the importance of such factors as gender, the years of experience, and the grade level of teaching. The answers of teachers helped to reach statistical significance on the level of digital citizenship awareness for Saudi Arabia teachers. Several recommendations on how digital citizenship awareness could be

improved and what steps could be taken in future research were given and properly explained.

Keywords: teachers' perceptions, respect, educate, protect, gender, grade level, experience

ACKNOWLEDGEMENTS

In the Name of Allah, the Most Compassionate, the Most Merciful.

Praise be to Allah and blessing and peace be upon our Prophet Mohammed, his family, and his companions.

First of all, thank God for his Grace and his generosity for helping me to finish my dissertation and obtain a doctorate degree.

And then thank the late King Abdullah bin Abdulaziz Al Saud, the founder of the Custodian of the Two Holy Mosques Program for External Scholarship.

This work would not have been possible without the support of the Kingdom of Saudi Arabia government, the Custodian of the Two Holy Mosques Program for External Scholarship, University of Northern Colorado or Department of Educational Technology. I am especially indebted to Dr. Mia Williams, Chair of the Department of Educational Technology, who have been supportive of my learning goals and who worked actively to provide me with the protected academic time to pursue those goals. Also, I would like to thank Dr. Christine Kyser for her support and guidance, Dr. Randy Larkins for guiding me in the research methods, and Dr. Hyun J. Kang for her willingness to participate in the dissertation committee and on the valuable comments on my dissertation.

Lastly, I do not forget to extend my thanks to all of the participants for their knowledge and opinions contributions in this research.

DEDICATION

… To my father, Saif, may Allah make his abode in paradise….

… To my uncle, Abdullah, may Allah make his abode in paradise….

… To my mother, Dhafrah, may Allah prolong her life….

… To my brothers, Ali, Mohammed, Saad, and Alia, may Allah protect them….

Lastly, nobody has been more influential to me in the pursuit of this dissertation than my wife and my children. My words could not express my appreciation toward them. I have the honor to pay this treatise to my great wife whose love and support is with me in whatever I pursue and to my three wonderful children, Saif, Alia, and Reema, who provide unending inspiration.

TABLE OF CONTENTS

CHAPTER

III. continued

CHAPTER
IV. continued

CHAPTER
IV. continued

LIST OF TABLES

LIST OF FIGURES

CHAPTER I

INTRODUCTION

Overview

Contemporary information and communication tools have already transformed the world into a small village by ensuring that people are able to share their hopes, dreams, concerns and even their disappointments across geographical locations and time considerations. In the education sector, the massive use of technology in the 21st century has served to not only increase teachers' interaction with the digital world (Berardi, 2015), but also to provide opportunities for online learning and knowledge transfer (Al-Zahrani, 2015). However, as the technology revolution takes root, it is not uncommon to see students and teachers misusing or abusing emerging information and technology solutions due to lack of awareness and education on the appropriate behaviors in technology use (Ribble, 2011).

The government of Saudi Arabia represented in the ministry of communication and information technology is knowledgeable of the vital role of communication and information technology in the development of their communities. From this perspective, Saudi Arabia government establishes projects and initiatives that strive to keep up with the remarkable acceleration in technology. At the same time, the Saudi Arabia government works to determine the frameworks of laws and policies for the best use of all sources of communication and information technology. One of the important projects is the National Plan for Communications and Information Technology (NPCIT), which is

a project meant to promote the principle of digital transformation to the information society. According to a study conducted by the Communications and Information Technology Commission (CITC), it was revealed that the percentage of using social media network among male and female were equal. In this regard, the study showed 80 % of participants in this study had used the internet two hours and more daily. Also, it is noted that the utilization of the Internet increases among young people more than older people.

Regarding the above, the government of Saudi Arabia establishes Anti-Cyber Crime Law to prevent the community from such crime and determining their punishment. To ensure information security, protect rights resulting from the legitimate use of computers and information networks, protect the public interest, morals, and ethics, and protection of the national economy (CITC, 2014). Thus, based on the CITC questionnaires, more than 10,000 interviews each year from 2007 to 2009, Face-To-Face Interviews procedures were conducting personally. Stratified random sampling and quota sampling procedures were applied depending on the character of each questionnaire. So, each poll reflected the population targeted. The study assessed the current status of Computer and Internet Usage in Saudi Arabia, and it intended to identify the penetration levels, attitudes, usage patterns, and the future potential of the Internet in Saudi Arabia. An accurate landscape of technology use in Saudi Arabia was provided. The context of K-12 education showed technological increase as well. The average percentage grew in the number of computers in the schools surveyed. In a period between 2007 and 2009, a notable increase whether the availability of computers in schools, or in the availability of computers with Internet access was observed. That information indicated that access to

computers and the Internet existed. Pedagogical practices with this technology were not noted.

It is also important to consider the role of cultural norms and understandings that exist around digital media and citizenship in Saudi Arabia. CITC (2014) developed the Anti-Cyber Crime Law according to which people could clarify their roles in the cyberspace and choose the directions in regards to their needs, goals, and expectations. However, the law did not cover the cultural heritage of cyberspace in Saudi Arabia. Understanding Saudi Arabian cultural traditions should be an obligation for all people who live in the country or want to visit it for some period because all of them are based on religious dictates. In general, the use of technologies is supported by the citizens of Saudi Arabia in case it does not contradict the traditions and religious norms of the country. Though Saudi Arabia remains to be a country with definite, conservative beliefs and rules, its richness and perspectives promote the usage of technologies and the development of digital media and citizenship.

The country grows fast, and the impact of technology implementation is considerable indeed. People cannot neglect their chances to become educated, properly aware, and able to use as many opportunities as possible. The technological-cultural clash should not be a threat to the country but an opportunity to improve the quality of life and share Arabian beliefs and norms worldwide. Regarding such attitudes to the digital revolution, the development of digital citizenship in Saudi Arabia should be defined as a crucial process for people, who respect their culture and do not reduce the importance of traditions at the expense of digital opportunities.

The positive use of technology in home or school environments is directly associated with one's current knowledge and awareness of digital citizenship (Snyder, 2016). Teachers, in particular, were expected to demonstrate sufficient knowledge and awareness of the nine general areas of behavior proposed by Ribble (2011), which included *etiquette* (electronic standards of conduct or procedure), *communication* (electronic exchange of information), *education* (the process of teaching and learning about technology and the use of technology), *access* (full electronic participation), and *commerce* (electronic buying and selling of goods). Other general areas of behavior include *responsibility* (electronic responsibility for actions and deeds), *rights* (those freedoms extended to everyone in a digital world), *safety* (physical well-being in a digital technology world), and *security* (self-protection). However, although the use of digital tools for educational, social, economic, and cultural activities has increased dramatically in recent years to coincide with the important role played by the Internet as a triggering agent for socialization and modernization (Al-Zahrani, 2015), available scholarship shows that many digital natives are "very comfortable using digital tools without understanding the complexities and risks that are associated with their use" (Berardi, 2015, p. 2). To date, no substantive studies have been undertaken to investigate the perceptions of teachers on their current knowledge and awareness of digital citizenship, which is increasingly important in ensuring appropriate use behaviors as well as addressing the complexities and risks associated with contemporary digital tools (Al-Zahrani, 2015).

Statement of the Problem

The available literature demonstrates that "the attitudes and beliefs of other educators regarding teachers who embrace the instruction of digital citizenship was the most impactful variable on student measures of success in relation to desirable digital behaviors" (Berardi, 2015, p. 5). School teachers must demonstrate knowledge of, and awareness for, digital citizenship if they are to guide students to become responsible adults in terms of demonstrating appropriate behavior when using technology tools for education and socialization (Ribble, Bailey, & Ross, 2004). Research is consistent that, "if students are to become productive global citizens who communicate with each other in a highly networked world, then studies are needed to determine how digital citizenship can be leveraged to foster responsible use of technologies for global collaboration, information exchange, and learning" (Snyder, 2016, p. 2). This, in turn, means that teachers must assume a frontline role in encouraging students to internalize responsible technology use behaviors in various online learning and socialization contexts. Indeed, according to Ribble et al. (2004), teachers must have the necessary skills and knowledge to ensure that students do not use technology in a way that compromises their personal security, online reputations, as well as future employability.

Although teachers have been prompted to incorporate various strategies into classroom settings in order to guide student online behaviors and reduce misuse of available technology tools, incorporating digital citizenship into contemporary learning environments may not be an easy undertaking since both educators and learners are unclear about digital citizenship (Snyder, 2016). Indeed, available literature underscores a disconnect between teachers' perceptions of digital citizenship and their use of

technology in educational and social contexts due to a misalignment of their own technology use behaviors with the 21st century practices (Lawrence & Calhoun, 2013). Research is also consistent that the level of knowledge and awareness of digital citizenship demonstrated by educators is important in determining if they are able to use technology appropriately and responsibly according to Ribble's (2011) thematic characterizations (Ribble, 2011), guide students on appropriate technology use behaviors (Simsek, 2013), and ensure that learning takes place in an environment that safeguards the digital reputation of learners and educators (Al-Zahrani, 2015).

However, the concepts of digital citizenship have been inconsistent (Ribble, 2011), and research on the current knowledge and awareness regarding digital citizenship in the Saudi Arabia context remains scanty and largely fragmented (Al-Zahrani, 2015). Specifically, there is lack of research studies that explore Saudi Arabia teachers' perceptions of digital citizenship awareness according to demographic characteristics such as gender and years of experience. More research is needed to explore the scope of knowledge and understanding about digital citizenship among Saudi Arabia teachers with the view to developing an evidence base that could be used by stakeholders in the education sector to develop policies and action plans that will ensure that technology tools for learning and teaching are used in an appropriate and responsible manner.

Purpose of the Study

The purpose of the proposed mixed-methods study was to explore Saudi teachers' perceptions of their current knowledge and comprehension of digital citizenship and introduce the analysis of different points of view using qualitative and quantitative information gathered with the help of two different research methods. Additionally, the

study sought to explore how gender, grade level of teaching, and years of experience influenced the perceptions of Saudi teachers about digital citizenship awareness. Ribble's characterization of the essential elements of digital citizenship (respect, educate, and protect) was used to assess the extent of comprehension and knowledge of digital citizenship demonstrated by teachers practicing in Saudi Arabia.

Research Questions

The proposed study was guided by the following research questions and sub-questions:

Q1 What are the perceptions of digital citizenship awareness among Saudi Arabia teachers based on Ribble's categorization of respect, educate, and protect?

Q2 What scope of digital citizenship awareness does Saudi Arabia teachers demonstrate based on Ribble's characterization of respect, educate, and protect in related to:

a. What are the descriptive statistical levels of digital citizenship awareness for Saudi Arabia teachers based on Ribble's categories of respect, educate, and protect?

b. Is there a significant mean difference on digital citizenship awareness based on the gender of the teacher?

c. Is there a significant mean difference on digital citizenship awareness based on the teachers' level of teaching (elementary, middle, and high school)?

d. Is there a significant mean difference on digital citizenship awareness based on the teachers' years of experience?

Significance of the Study

In contemporary educational settings, it is the role of teachers "to teach current learners about cyber safety in order to address and prevent technology misuse" (Al-Zahrani, 2015, p. 204). Such a role lays at the core of digital citizenship, thus, the need

for teachers and other educators to demonstrate key skills and competencies on how they can use technology according to Ribble's characterization of respect, educate, and protect (Simsek, 2013). However, available educational scholarship shows that teachers have varying definitions of digital citizenship that do not completely align with contemporary technology practices (Lawrence & Calhoun, 2013), and that teachers are yet still unable to relate their perceptions of digital citizenship to the use of technology in contemporary contexts (Berardi, 2015).

By exploring Saudi teachers' perceptions of their current knowledge and comprehension of digital citizenship, the proposed study aimed at developing an evidence base that could be used by education stakeholders in Saudi Arabia and introducing the measures for increasing digital citizenship awareness among teachers. Additionally, the knowledge on the perceptions of digital citizenship awareness among Saudi Arabia teachers was developed to contribute immensely towards identifying the gaps that could hinder sufficient comprehension and knowledge of digital citizenship in the targeted population.

Definition of Terms

In the context of the proposed study, the following definitions were used:

Digital citizenship. "The use of digital tools in respectful, safe, and productive manners with regard to self and others" (Berardi, 2015, p. 8).

Digital etiquette. The awareness of electronic codes or the standards of conduct that make one become a responsible online citizen (Snyder, 2016)

Digital literacy. The process of teaching and learning about technology and the use of technology (Snyder, 2016), or the capability to employ information and

communication technologies and one's cognitive and technical competencies to identify, create, and communicate information in digital contexts (Berardi, 2015).

Digital native. "The label given to a person born during a time period of immersion in technology as a means of problem solving, exploring, and living the routine and novel aspects of his or her life" (Berardi, 2015, p. 8)

Limitations of the Study

There were several constraints related to the proposed study. The mixed method design required that a small sample being used for the depth of inquiry of the qualitative data collection. That small sample size ensured that the researcher was able to solicit details from participants and included thick description in the findings. The convenience sampling of the quantitative data opened the possibility for uneven representation of the teacher population across Saudi Arabia. That limitation was addressed by ensuring the use of appropriate research design, sampling strategies, and data collection and reporting methods. Lastly, time constraints and financial limitations could limit the capacity of the researcher to collect data. Such challenges were addressed by using a detailed research plan and requesting for funding to support the research process. Every effort was made by the researcher to employ the design that seeks to collect information from a balanced representation of teachers across Saudi Arabia.

Summary

This section set the stage for exploring the extent of comprehension and knowledge of digital citizenship among Saudi Arabia teachers. The background information was identified to explain the need for conducting a study that aimed at exploring the perceptions of Saudi teachers with regard to digital citizenship awareness.

The section also identified the research questions that were expected to guide the research process, after which a description of the significance of the study was provided. The next section should provide a theoretical framework for the study and review available literature on digital citizenship.

CHAPTER II

LITERATURE REVIEW

Introduction

This section reviews literature related to digital citizenship and perceptions of knowledge, comprehension, and awareness of digital citizenship in contemporary educational settings. The section commences by discussing the theory of planned behavior (TBP) as the preferred theoretical framework for guiding the research process. Afterward, the section reviews the concepts of digital citizenship and digital citizens, before discussing Ribble's characterization of digital citizenship according to the subgroups of respect, educate, and protect. Finally, the section evaluates and reviews current research on digital citizenship awareness.

Theoretical Framework: The Theory of Planned Behavior

Since the overarching aim of the theoretical framework is to bridge theory to practice (Grant & Osanloo, 2014), the study applied the Theory of Planned Behavior (TPB) to explore the extent of comprehension and knowledge of digital citizenship among Saudi Arabia teachers. The TPB posits that human action is guided by three kinds of considerations, namely behavioral beliefs (beliefs about the likely consequences of the behavior), normative beliefs (beliefs about the normative expectations of others), and control beliefs (beliefs about the presence of factors that may facilitate or impede performance of the behavior; Yang, 2013). The behavioral beliefs or values generate a

constructive or unconstructive attitude towards the behavior and guide considerations of positive and negative outcomes, while the normative beliefs result in apparent social (or peer) pressure or subjective norm; however, the control beliefs and values are known to generate a behavioral control by influencing behavioral performance (Teo & Lee, 2010). In the TPB framework, behavioral intention is the most significant forecaster of behavior based on the fact that it encompasses the factors or issues that describe how hard or challenging individuals are willing to perform a particular behavior. Attitudes toward use (ATU) guide behavioral orientation and are described as the way people are positively or negatively disposed towards an object, while subjective norm (SN) is defined as one's perception of whether people important to the individual think the behavior should be performed (Yang, 2013).

In the proposed study, SN was taken as the extent to which a teacher perceived the demands of the 'important' others (peers and colleagues) on that teacher to use or demonstrate awareness of digital citizenship, while perceived behavioral control (PBC) was used to denote the perceived ease or difficulty of performing the behavior of using digital citizenship in learning contexts. Research was consistent that "in the context of technology-based behaviors, PBC has been found to correlate well with perceived ease of use or difficulty related to particular technology, which have been shown to be major factors predicting intention to use that technology" (Teo & Lee, 2010, p. 969). Since the aim of the proposed study was to explore the extent of comprehension and knowledge with respect to digital citizenship among Saudi Arabia teachers, the researcher attempted to demonstrate how the three independent variables of TPB (ATU, SN, and PBC) exerted

the significant influence on the behavioral intentions of Saudi teachers to use digital citizenship according to Ribble's subgroups of respect, educate, and protect.

Understanding Digital Citizenship

Digital citizenship has been defined in the literature "as the norms of behavior with regard to technology use" (Ribble et al., 2004, p. 7). Snyder (2016) defined digital citizenship as "the ethical, moral, and responsible use of technology to ensure the safety of oneself and others when collaborating in an increasingly digital, networked, and global society" (p. 30). Digital citizenship, also known as the e-citizenship, involves regular access to networks and their effective use that require several conditions such as the presence of access to the Internet, the availability of computers or gadgets, the ability to use technology properly, and the critical thinking skills to evaluate the reliability of information found online (Ribble et al., 2004). At its core, digital citizenship aims to not only give young people the tools and ethical code to make good choices in online environments, but also to keep the future safe and allow positive communications and relationships to emerge from social media connections (Berardi, 2015). According to Snyder (2016), the main objective of digital citizenship was to assist each member of the society to develop a certain level of awareness of the dangers and hazards, as well as the positive outcomes related to assuming the role of a digital citizen in a networked world.

Who Is a Digital Citizen?

A digital citizen was defined as an individual who "practices conscientious use of technology, demonstrates responsible use of information, and maintains a good attitude for learning with technology" (Richards, 2010, p. 518). It is a confident user of the digital technology, who wants to participate in educational, cultural, and economic activities of

the digital community. The investigations showed that a digital citizen not only developed critical thinking skills in cyberspace and competently spoke the language of the community, but also communicated with others in an honest and ethical behavior that respected the concepts of privacy and freedom of expression in the digital world and actively promoted the value of e-citizenship (Snyder, 2016). Drawing from these definitions, Al-Zahrani (2015) proposed that a digital citizen should not only advocate for equal human rights for all, but also treat others courteously or considerately, actively pursue an education and develop habits for lifelong learning, and spend and manage money responsibly.

Ribble's Concept of Respect, Educate, and Protect

Ribble (2011) suggested teaching digital citizenship and using the subgroups of respect, educate, and protect (REPs), with each REP containing three topics that should form the basis for digital citizenship awareness and understanding. The broad concept of REPs functions as a way to explain, as well as to teach the themes of digital citizenship, which include etiquette, access, law, communication, literacy, commerce, rights and responsibility, safety (security), as well as health and welfare. Each of the three subgroups in the REPs framework has three themes that explain the appropriate behavior in online environments, hence the need to explore these subgroups and themes in more detail. The available literature demonstrates that the REPs framework could be used in educational settings to create awareness of the expectations for demonstrating the respectful and responsible use of available technology tools to learn and share knowledge (Mossberger, Tolbert, & McNeal, 2008).

The first subgroup, *respect*, contains the themes of etiquette (electronic standards or procedure), access (full electronic participation in society), and law (electronic responsibility for actions and deeds). Research was consistent that higher levels of perceived Internet attitude and computer self-efficacy enhanced the capacity of technology users to respect themselves and others online by demonstrating greater propriety and responsibility for own actions (Ribble, 2011). In their study, Lawrence and Calhoun (2013) argued that respect was the main issue for students and teachers engaged in virtual communities as it underscored the importance or value of respecting others' identities, cultures, and human rights. Indeed, "the literature suggests that respect, especially for others, is vital in digital societies since it is becoming much easier to infringe others' rights due to advances of ICTs" (Al-Zahrani, 2015, p. 210).

The second subgroup, *educate*, encompasses the themes of communication (electronic exchange of information), literacy (the process of teaching and learning about technology and the use of technology), and commerce (electronic buying and selling of goods). The study by Al-Zahrani (2015) found that students with higher levels of computer experience and skills were "more involved in activities related to educating oneself and connecting with others compared with students with less computer experience" (p. 210). Computer knowledge, skills, awareness, and experience were found to play an important role in ensuring that people were able to exchange and share information with others in online contexts.

The third subgroup, *protect*, contains the themes of rights and responsibility (those freedoms extended to everyone in a digital world), safety (electronic precautions to guarantee safety and security), and health and welfare (physical and psychological

well-being in a digital technology world). Here, one particular study found that "students with higher levels of daily average technology use tend to protect themselves and others in the digital environments more compared with students with lower daily average technology use" (Al-Zahrani, 2015, p. 211).

In exploring the extent of comprehension and knowledge with respect to digital citizenship, it was important to evaluate some contemporary issues related to digital citizenship. These issues could be used in practice settings to identify the perceptions, knowledge, and awareness of digital citizenship among Saudi Arabia teachers. A full description of the issues based on Ribble's REPs concept is demonstrated in Table 1.

Current Research on Digital Citizenship

Awareness

Although the majority of teachers and other educators believe that schools' integration of technology in teaching and learning is vital to keeping up with the current trends of the increasingly networked world, "making technology effective in the classroom requires much more than merely equipping students with Internet access and devices" (Dotterer, Hedges, & Parker, 2016, p. 59). For these authors, "students must understand how to use personal technology in ways that enhance their learning experience and lead to self-empowerment and awareness, and schools must ensure that they protect students while guiding their exploration of the digital landscape" (Dotterer et al., 2016, p. 59).

Table 1

Contemporary Issues of Digital Citizenship

Respect-Educate-Protect Subgroups	Themes of Digital Citizenship	Contemporary Issues
Respect	Etiquette	Using technology in ways that minimize the negative effects on others; using technology when it is contextually appropriate; and respecting others online by not engaging in cyberbullying, flaming, inflammatory language, and other digital infringements
	Access	Equitable access for all students; accommodations for students with special needs; and programs for increasing access outside schools
	Law	Using file-sharing sites; pirating software; subverting Digital Rights Management (DRM) technologies; hacking into systems or networks; stealing someone's identity; and sexting and sharing of illicit photos
Educate	Communication	Email; cell phones; personal video calls (Skype); instant messaging; text messaging; blogs; and wikis
	Literacy	Learning the digital basics (browsers, search engines, download engines, and email); evaluating online resources to determine their accuracy of content and trustworthiness of online vendors; and exploring and developing online learning modes and distance education

Table 1 (continued)

Respect-Educate-Protect REPs Subgroups	Themes of Digital Citizenship	Contemporary Issues
	Commerce	Online buying and selling through commercial sites, auction sites, and other Internet locations; media subscriptions and purchases made through media software such as iTunes; and buying and selling virtual merchandise for online games
Protect	Rights and Responsibilities	Following acceptable use policies and using technology responsibly both inside and outside school, using online material ethically, including citing sources and requesting permissions; using technology to cheat on tests and assignments; and reporting cyberbullies, threats, and other inappropriate use
	Safety/Security	Protecting hardware and network security; ensuring personal security from identity theft, phishing, and online stalking; ensuring school security from hackers and viruses, and protecting communities from terrorist threats
	Health and Wellbeing	Using proper ergonomics; avoiding repetitive motion injuries; becoming addicted to the Internet or to video games; and withdrawing from society

Source: Ribble, 2011

The importance of digital citizenship awareness was documented in several research studies. In their study, Hollandsworth, Dowdy, and Donovan (2011) argued that the "lack of digital awareness and education can, and has, led to problematic, even dangerous student conduct." (p. 37). On their part, Weigel, James, and Gardner (2009) noted that "the Internet's potential for learning may be curtailed if youth lack key skills

for navigating it, if they consistently engage with Internet resources in a shallow fashion, and/or if they limit their explorations to a narrow band of things they believe are worth knowing" (p. 3). Sufficient knowledge and awareness of digital citizenship empower users to make smart, responsible, and respectful decisions when interacting with others in online contexts (Orth & Chen, 2013), exercise the values of good judgment and kindness when using the Internet to learn and socialize (Hollandsworth et al., 2011), and explain the consequences of the decisions that individuals make online (Dotterer et al., 2016). According to the standards developed by the International Society for Technology in Education (ISTE), digital citizenship awareness helped students to (a) understand human, cultural, and societal issues related to technology and practice legal and ethical behavior; (b) advocate and practice safe, legal, and responsible use of information and technology; (c) exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity; (d) demonstrate personal responsibility for lifelong learning; and (e) exhibit leadership for digital citizenship (Snyder, 2016).

The ISTE also provided standards that could be used by teachers to promote and model digital citizenship and responsibility in educational settings. These standards underscore the various skills and knowledge of digital citizenship that teachers must demonstrate in order to guide students toward the appropriate and responsible use of technology (Hollandsworth et al., 2011).To achieve competency in digital citizenship, teachers must not only understand local and global societal issues and responsibilities in an evolving digital culture and display legal and ethical behavior in their professional undertakings, but also advocate, model, and teach safe, legal, and ethical use of digital information and technology, including respect for copyright, intellectual property, and the

appropriate documentation of sources (Snyder, 2016). Teachers are also expected to (a) address the diverse needs of all learners by using learner-centered approaches providing equitable access to appropriate digital tools and resources, (b) promote and model digital etiquette and responsible social interactions associated with the use of technology and information, and (c) develop and model cultural understanding and global awareness by interacting with peers and learners of other cultures using digital-age communication and collaboration tools (Snyder, 2016).

"Teachers need professional development opportunities to learn the basics about digital technologies as they often come to the classroom without proper understanding about the digital technologies on which they are asked to provide instruction" (Snyder, 2016, pp. 41-42). In one particular study, Pusey and Sadera (2012) found that teachers in pre-service settings lacked the knowledge, skills, and competencies needed to teach learners how to use contemporary technology tools for learning and socialization. In another study, Guo and Stevens (2011) found that teachers who demonstrated positive attitudes toward emergent technology tools were more able to positively impact students' use of these tools than teachers with negative attitudes or low self-efficacy. Other studies showed a link between the level of digital citizenship awareness and knowledge among users and the capacity to use technology tools without any problems, communicate in an appropriate and responsible way when using technology tools, and safeguard own identity, as well as the identities of other collaborators in online contexts (Kolesinski, Nelson-Weaver, & Diamond, 2013). These studies point to a direct connection between teachers' attitudes, understanding, and perceptions about technology and level of respect for oneself and others communicating and interacting in online contexts.

Much of the research on digital citizenship awareness and perceptions of use focused on students at the expense of teachers. In one particular study, Al-Zahrani (2015) found that "students with good levels of attitudes toward the Internet can be better digital citizens who respect themselves and others and may effectively engage in more activities relevant to educating themselves and others online" (p. 211). Specifically, the study found that students with higher levels of confidence and trust in their technological capabilities tended to respect themselves and others online, learn and share information in respectable virtual environments, and protect themselves and others from digital infringements such as cyber-bullying, use of abusive language, and unauthorized access. In one study focusing on teachers, Sadaf, Newby, and Ertmer (2013) found that "the ability of teachers to use technological tools for personal use does not hold the same effective value as a professional's self-efficacy in using the same tools for instructional purposes" (p. 241). Since professional self-efficacy was gained through experience, it was possible for teachers' level of experience to become an important variable in determining the level of digital citizenship awareness among teachers.

Lastly, several research studies attempted to investigate how demographic variables such as race, ethnicity, and socioeconomic status affected the use of technology. The findings from these studies demonstrated that racial and ethnic considerations, systematic dissimilarities in the opportunities available to individuals and communities, income and educational levels, and type of occupation contribute significantly to lower rates of home computer and Internet access and use, meaning that these demographic characteristics influence the formation of attitudes and awareness of how to use technology for learning and socialization (Mossberger et al., 2008). Motivational issues,

cultural perceptions, time constraints, and family responsibilities were also found to influence the use of technology. In gender, Mossberger et al. (2008) noted that "survey data reveal almost no substantive difference between men and women in self-reported technical competence, information literacy, or the ability to use the Internet to find information" (p. 105). Overall, these findings demonstrated that demographic variables could serve as a useful starting point for understanding issues of digital citizenship awareness and comprehension.

CHAPTER III

METHODOLOGY

Introduction

This chapter describes the research methodology that was used in the study, including the researcher stance, study design, data collection methods, and data analysis techniques. Issues of research dependability, credibility, transferability, validity, and reliability should also be discussed in this section.

Purpose Overview and Research Questions

The purpose of the research study was to explore Saudi teachers' perceptions of their current knowledge and comprehension of digital citizenship. Additionally, the study sought to evaluate how demographic characteristics such as gender, grade level of teaching, and years of experience influenced the perceptions of Saudi Arabia teachers about digital citizenship awareness. The specific research questions could guide that particular research study related to exploring the scope and perceptions of digital citizenship awareness among Saudi teachers based on Ribble's characterization of respect, educate, and protect.

Researcher Stance

The researcher assumed a pragmatic knowledge stance in designing the research process in a way that had to allow the collection of both quantitative and qualitative data equally. In the pragmatic stance, "the researcher bases the inquiry on the assumption that

collecting diverse types of data best provides an understanding of a research problem" (Creswell, 2003, p. 21). This philosophical stance postulates that knowledge claims arise out of actions, situations, and consequences rather than antecedent conditions (Mitchell & Jolley, 2013), and that researchers are free to draw liberally from both quantitative and qualitative approaches when they engage in their research (Creswell, 2003). Drawing from these elaborations, it is evident that the pragmatic philosophical stance fits the expectations of the proposed research study since it provides the researcher with the opportunity to use multiple methods, different worldviews, different assumptions, as well as different types of data collection and analysis to explore the current knowledge and awareness of digital citizenship among Saudi Arabia teachers. This is consistent with the observation made by Creswell (2003) that the pragmatic stance was not committed to one system of reality and did not view the world as an absolute unity.

Study Design

The study employed a mixed methods research approach and the concurrent triangulation research design to explore Saudi teachers' perceptions of their current knowledge and comprehension of digital citizenship. In a mixed methods approach, the researcher tended to not only base knowledge claims on pragmatic underpinnings such as consequence-oriented, problem-centered and pluralistic perspectives, but also to employ strategies of inquiry that involve gathering field data either simultaneously or sequentially to best understand existing research problems (Creswell, 2003). Harwell (2012) argued that the mixed methods research approach "combine qualitative and quantitative methods in ways that ostensibly bridge their differences in the service of addressing a research problem" (p. 151). A mixed methods approach was selected for this

study due to its capacity to provide multiple insights on digital citizenship awareness through the collection of qualitative and quantitative types of data in ways that could draw on the strengths of both traditions of inquiry. The research design gave equal importance to the qualitative and quantitative data in order to gain a holistic and statistical understanding of teacher's comprehension of digital citizenship in Saudi Arabia.

As mentioned above, the concurrent triangulation research design was used to allow the researcher to consider the findings, and describe and build the understanding about the experiences and dispositions of the research participants. Creswell and Plano Clark (2007) noted that a researcher, who chose the "concurrent triangulation design," had to collect and analyze two types of data, qualitative and quantitative, separately, but on the same phenomenon, in order to present the results that could be converged in the interpretation process. This research design was suited for this study, as it helped the researcher to use quantitative and qualitative data that were collected and compared to remove the weaknesses of each other and use the strong aspects to cover the topic. However, the researcher had to understand both, the nuances of the topic from in-depth exploration from a few participants through qualitative methods and a broad view of the educational landscape through the quantitative data, which collected information from many participants but is limited in scope.

Additionally, this research design allowed both, inductive and deductive investigation on digital citizenship awareness, to take place in the same project, hence ensuring the researcher was able to develop a knowledge base on the main research questions.

Qualitative and Quantitative Framework

First, the interview procedure was used to identify the perceptions of digital citizenship awareness among Saudi Arabia teachers based on the requirements of the first research question (see appendix A). Specifically, an online interview method (via Skype) was used in the qualitative phase to explore the perceptions of digital citizenship awareness according to Ribble's characterization of respect, educate, and protect. The administration of the semi-structured interview assisted the researcher to collect textual data from four selected Saudi teachers, after which coding and thematic analysis were undertaken to develop themes and undertake cross-thematic analysis based on the qualitative research question (Miles & Huberman, 2001). The online interview procedure was not only cost-effective and flexible, but it also provided an opportunity for the researcher to engage more with participants in collecting textual information on the perceptions of digital citizenship among Saudi Arabia teachers based on Ribble's categories of respect, educate, and protect.

Then, a survey research design was used to collect appropriate statistical data that then were used to investigate the scope of digital citizenship awareness exhibited by Saudi teachers based on Ribble's characterizations (respect, educate, and protect) and demographic characteristics (gender, grade level of teaching, and years of experience). Specifically, the researcher made use of an online questionnaire adopted from Al-Zahrani (2015) to quantitatively measure the main variables of interest as indicated in the main quantitative research questions and sub-questions (see Appendix B). According to Mitchell and Jolley (2013), survey research encompassed "acquiring information about one or more groups of people--perhaps about their characteristics, opinions, attitudes, or

previous experiences--by asking them questions and tabulating their answers" (p. 261). The ultimate objective of survey research was to learn about the behavior, opinions, abilities, beliefs and knowledge of a particular population by surveying a sample of that population and generalizing the results (Creswell, 2003). Drawing from these elaborations, it was clear that this research design was effective in enabling the researcher to collect participant self-report data (filled by the participant as the online questionnaire will be self-administered) by posing a set of questions to the sampled respondents at a particular point in time, before summarizing their responses using quantitative strategies in order to draw inferences about the scope of digital citizenship awareness among Saudi Arabia teachers. Research was consistent that surveys had the capacity to present an accurate portrayal or account of the main variables or characteristics under investigation by providing a fast and inexpensive way to gather a lot of information and data about a sample's attitudes, beliefs, value systems, and self-reported behaviors (Mitchell & Jolley, 2013). In the context of the study, the survey design adopted by the researcher provided an enabling framework through which quantitative self-report data on digital citizenship awareness collected using an online-administered questionnaire and analyzed using the Mann-Whitney U test and the Kruskal-Wallis H test. The researcher used these two types of tests to compare several variables of the study. The Mann-Whitney U test and the Kruskal-Wallis H test are both nonparametric methods the goal of which to detect the nature of the samples and the means of populations (Wright, 2013). These tests were used as the main part of the statistical analysis with the techniques to answer the main quantitative research question and sub-questions (Black, 2011). The Mann-Whitney U test was used to compare the means of two groups regarding the gender of teachers. The

Kruskal-Wallis H test aimed at identifying if there were the statistical significant differences between the groups chosen for the analysis and defined as independent variables in research (Wright, 2013). It was used to compare the means of different groups regarding the level of teaching and the years of experience.

Participants

The choice of the participants is an integral step that has to be taken carefully and purposefully. There were two types of research, qualitative and quantitative, used to answer the research questions. Four qualitative participants were chosen. The first participant was a 33-year-old male math teacher in the middle school. At the time of his participation in the interview, his teaching experience was 8 years. The second interviewee was a 36-year-old English teacher in the middle school with 13 years of experience. The third participant was a 43-year-old male Arabic language teacher, whose teaching experience was 17 years at the time of participation. The last participant was a 31-year-old Islamic teacher with 11 years of experience. The information had to be confidential, and no names or direct places of work were mentioned in the study.

In comparison to qualitative research, quantitative research included a larger sample with a number of characteristics to be identified. The participants of quantitative research were 361 K-12 teachers in Saudi Arabia schools. They were invited to participate in the investigations voluntary. There were 202 female teachers and 159 male teachers from elementary, middle, and high schools responded to the invitation. Their overall age was between 31 and 40 years. The years of teaching experience varied from 1 year to over 20 years.

Data Collection Design

The process of collecting the data on the basis of the concurrent triangulation method developed by Creswell and Plano Clark (2007) had the following form (see Figure 1). Qualitative data for the study were collected through Skype interviews. Specifically, a purposeful sampling of four male teachers from schools in Saudi Arabia was done through the Skype software with the view to assisting the researcher to gain an in-depth understanding of Saudi teachers' perceptions of digital citizenship awareness based on Ribble's characterization of respect, educate, and protect. Participants were requested to take part in individual 45-minute semi-structured video interviews discussing the perceptions of digital citizenship awareness based on Ribble's subgroups of digital citizenship (see Appendix A). The interview attempted to explore issues of digital citizenship awareness, perceptions, and knowledge of the teachers, such as the meaning of digital citizenship, the importance of digital citizenship, examples of use, and the confidence level in their ability to model and teach digital citizenship in the future.

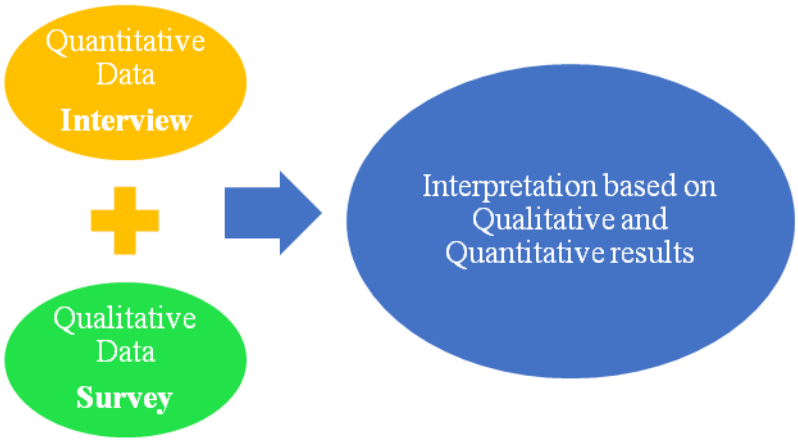

Figure 1. Concurrent triangulation method.

The Interviews were in the primary language of participants, which is Arabic. Interviews were digitally recorded and transcribed. A special audio device was used during the interviews, and the participants were informed about it. No video recordings were made. After that, the Arabic data were translated to the English language and sent for the check to two native Arabic speaker experts to ensure the accuracy and clarity of the information. No identifying information was collected either in written notes or on the audio recordings. Additionally, no other data such as observations or artifacts were taken from the participants. No deception of any kind was used, and the participants had full knowledge of the purpose of the study well beforehand (see Appendix C). It was important to note that the interviews were structured around the issues that could be included in the questionnaire with regard to digital citizenship awareness. Overall, the interview data collection method fit into the context of the study by virtue of providing the researcher with the opportunity to develop an in-depth understanding of the perceptions of digital citizenship exhibited by Saudi Arabia teachers based on Ribble's categorization of respect, educate, and protect.

Quantitative data for the study were collected through the administration of an online questionnaire targeting a sample of 361 Saudi Arabia K-12 teachers, who were selected for the study using a convenience sampling strategy. The questionnaire was developed around a data collection tool developed by Al-Zahrani (2015) and the items were measured using a 5-point Likert-type scale (see Appendix B). The online questionnaire data collection method provided the benefits of ease of administration, minimal cost outlays, ease of data analysis, and capacity to collect large amounts of data from a large number of geographically diverse people in a short period of time (Creswell,

2003). Participation in the survey was voluntary, and respondents were able to choose and not to respond to any questions that they did not wish to answer. The opening page of the survey was the informed consent. The participants would click to continue to the content questions and, thus, indicating consent to participate (see Appendix D).

The chosen research design was based on two principles of participants' selection: a purposeful selection of qualitative data and a convenience selection for quantitative data. Additionally, each type of data were important to the collective understanding of the teachers' comprehension of digital citizenship in Saudi Arabia. Thus, each contributed different but equal information to the study.

Data Analysis Design

Qualitative Data Analysis Design

Based on Creswell (2003) and Merriam and Tisdell (2015), the researcher developed the qualitative data analysis using content analysis and categorization. Qualitative data analysis was designed to identify and describe the main statements about and the perceptions of digital citizenship. Qualitative data analysis was divided into several stages regarding four interviews conducted with four different male teachers. The design of this data analysis was the same for each interview. The analysis began with an appropriate audio recording that each participant was informed about beforehand. First, all interviews were audio recorded to make sure that all primary information was stored properly. The second stage was the transcriptions of audio recordings from the interviews. The interviews had to be listened thoroughly to make sure that every word and every emotion, if necessary, were transcribed. Audio recordings and their transcriptions were in Arabic. Therefore, as soon as the transcription of all interviews was

done, the development of a proper translation of the scripts from Arabic to English occurred. After the process of translation, the interviews were ready for a content analysis and the development of the categories. The data were processed and organized by the researcher to make sure that qualitative data were used in accordance with the most pertinent themes of digital citizenship awareness.

Coding was used in this study as a process to sort and organize the data (Creswell, 2003). It was an analytical process in terms of which qualitative data obtained from interviews had to be divided in a certain order and with a certain purpose. First, open coding occurred. All transcripts of interviews had to be read to clarify the main themes. The script of the interviews was read in order to find the answer to the research question. Data were coded based on themes that were developed about the qualitative research question that sought to use Ribble's categorization of respect, educate, and protect to explore the perceptions of Saudi Arabia teachers with regard to digital citizenship awareness. Qualitative data were coded with the help of certain categories and units with each unit encompassing one or more concept for an easy understanding and the analysis of the material (Saldana, 2015). Such units allowed the researcher to summarize and synthesize the material gathered from qualitative interviews with four male teachers. It was decided to use a systematic way while coding the information so that all ideas, concepts, and answers could fit the themes identified in the Ribble's table.. The same procedure was repeated with the other three interviews' scripts until the analysis of all four interviews was over and the codes for research question in all qualitative interviews were developed.

As soon as the codes were created, it was important to refine them by adding and expanding the categories with the help of units. It was the second stage of coding called axial coding when the texts had to be re-read in order to confirm the chosen units and categories. The relation between units and categories had to be discovered and proved as a crucial part of the analysis. Reading of the data helped to identify the main and common aspects taken from the interviews, and categorization was used to divide the information in regards to the research question. In general, such stages of qualitative data analysis as audio recording, the transcriptions of audio, the translation of the script from Arabic to English, and reading the material for several times helped to answer the research question in regards to the themes developed through the Ribble's table. It was important not to miss any detail in order to create an appropriate qualitative data analysis design and consider all important issues.

Dependability

In qualitative research contexts, dependability was defined as "the stability of findings over time" (Anney, 2014, p. 278). The author further posited that "dependability involves participants evaluating the findings and the interpretation and recommendations of the study to make sure that they are all supported by the data received from the informants of the study" (Anney, 2014, p. 278). The researcher used an effective research design and employed comprehensive data collection techniques to ensure that the processes within the study were "reported in detail, thereby enabling a future researcher to repeat the work, if not necessarily to gain the same results" (Shenton, 2004, p. 71). These strategies assisted greatly in describing what was planned and executed on a strategic level, addressing the details of what was done in the field, and ensuring the

effectiveness of the process of inquiry undertaken. Additionally, the researcher used the stepwise replication strategy and ensured that qualitative research data were evaluated by two researchers with the view to noting any inconsistencies (Anney, 2014).

Trustworthiness

In qualitative research, credibility attempted to address the issue of "how congruent are the findings with reality" (Shenton, 2004, p. 64). Since credibility was one of the most important factors in establishing trustworthiness, the researcher took adequate care to ensure that the qualitative results of the study were not only trustworthy and dependable but could also be supported by recent findings. Certain steps were taken to ensure that qualitative findings were congruent with reality: ensuring that research questions are well defined, following a consistent and appropriate methodology, undertaking a comprehensive review of the literature to note trends in digital citizenship awareness, and ensuring appropriate data collection and analysis (Anney, 2014). In the study, validity was ensured by (a) having a totally transparent systematic approach to data collection, (b) maintaining an audit trail to document clearly the flow and processing of data, and (c) member checking to ensure that the approaches and techniques used are valid.

Systematic approach to data collection. The chosen approach to collect data was transparent and systematic due to the chosen instrument in the mixed method research, an interview. That way of gathering information boosted the validity and dependability of the data due to the possibility to gather the information from first hands and investigate what could happen in the interviewees' mind (Zohrabi, 2013). It was hard for the researcher to observe the feelings of the participants. However, the interviews

helped to reveal the existing knowledge in the way that could be used to clarify the perceptions and consider human behavior (Zohrabi, 2013).

Audit trail. An audit trail a crucial step in the study with the help of which it was possible to replicate the results for future researchers (Merriam, 1988). The researcher provided properly recorded interviews and all supplementary data were introduced. The researcher provided the transcripts of the interviews to maintain a fresh memory and find a quick response or clarification of the point.

Participant check. As soon as the data were transcribed, it was necessary to develop a participant check in order to share the information and ask the participants to share their opinions about their responses and the information that had to be used in the study. Participants read the material, review the notes, and gave their responses about the results of the transcription. It was necessary to ensure each participant with the fact that their answers were properly interpreted. After their reviews, the information was further analyzed and used in the study.

Data Reduction

In this study, data reduction played an important role because it helped to analyze the material gathered and created the categories, which were important for the analysis. The data reduction procedure consisted of several important steps: reading of the data gathered, consideration of the research question and the data appropriateness to this question, underlying the main aspects of the information offered, re-reading of each unit of the information and the distinguishing between the categories, and check for each unit's answers in regards to the research question. Tables and matrixes were used as the main techniques in data reduction (Guest, MacQueen, & Namely, 2011). Figure 2 shows

a data reduction procedure could begin in case a word-for-word transcription was used in the study. There are several sentences taken from the interview. In the text, there are two main figures: R represents the researcher, a person who posed the questions, and P represents the participant, an interviewee who answered the questions.

R: In your own words, describe what "digital citizenship" means?
P: Digital citizenship is the best way to use the technology and take advantage of them in a way serving all segments of all ages and in all aspects of life…[It also entails avoiding] unethical use and [developing familiarity] with the principles and norms that are offensive to the person in particular and society in general
R: Describe an example of a teacher behaving irresponsibly or unethically with regard to technology use?
P: [The] English teacher introduced the film to the students to gain language skills. [However], as the teacher had not seen the video before, [he ended up] exhibiting bad shots in front of the students. It [is] better to be choosing the right video to display in front of students. Also, [a teacher] who transfers Internet information [from] unknown origin and [do] not take into account [the] efficacy or the health of the sources [may end up exhibiting] erroneous religious videos [that are] contrary to Islamic religion.

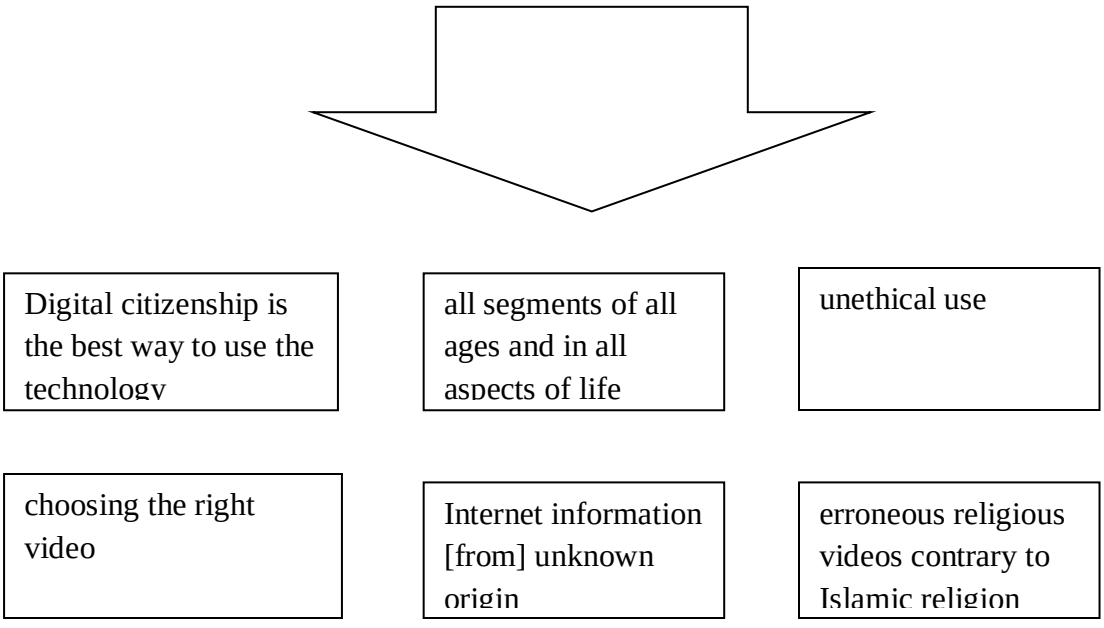

Figure 2. An example of data reduction.

There were three main categories in the study: educate, respect, and protect. In the interviews, it is necessary to underline the answers with such words as “digital,” educate,” “respect,” and “protect,” as well as other words that could be observed in the tables with the qualitative information (law, etiquette, religion, literacy, commerce, or health. The comparison of the information was developed in terms of three above-mentioned aspects and used to prove if there were any differences in teachers’ opinions and perceptions.

Transferability

Transferability encompassed the issues of applying the research to other contexts and situations and applying the findings of the study beyond the boundaries of research (Mitchell & Jolley, 2013). Research was consistent that, “since the findings of a qualitative project are specific to a small number of particular environments and individuals, it is impossible to demonstrate that the findings and conclusions are applicable to other situations and population” (Shenton, 2004, p. 69). The researcher solved that challenge by providing thick descriptions that enable “judgments about how well the research context fits other contexts” (Anney, 2014, p. 278). Thick description was used to describe and interpret social actions and decisions in the chosen context that was Saudi Arabia teachers and their knowledge of digital citizenship. Besides, that approach helped to identify one central feature, teachers’ perceptions, to entail assigning motivations and intentions for social actions. The detailed description of human behavior and reactions to different questions helped to promote credibility and convey the actual situations (Shenton, 2004). Thick descriptions were used to develop a strong report system on the basis of qualitative episodes taken from the interviews.

Quantitative Data Analysis Design

The Statistical Package for the Social Sciences (SPSS, version 21) was used to analyze the quantitative data from the questionnaires, after which statistical analyses was undertaken to explore the scope of digital citizenship awareness among Saudi Arabia teachers based on Ribble's characterization (respect, educate, and protect), as well as the selected demographic characteristics (gender, grade level of teaching, and years of experience). Specifically, the Mann-Whitney U test and the Kruskal-Wallis H test were used as two main comparative statistical techniques to test the mean differences among levels of digital citizenship based on the mentioned demographic variables (Black, 2011). This approach helped to compare and test several variables identified in previous chapters. These nonparametric tests required no specific distribution (McKnight & Najab, 2010). These statistical methods assisted the researcher to test the differences between two or more means in an attempt to identify how perceptions of digital citizenship awareness were influenced by the gender of the teacher (male or female), grade level of teaching (elementary, middle, and high school), as well as years of experience (1-10 years, 11-20 years, and over 20 years). The results of these analyses were instrumental in providing responses to the quantitative research question and sub-questions. The Mann-Whitney U test was used to compare the results regarding the gender of teachers. The Kruskal-Wallis H test was used to comprehend identify teachers' perceptions of digital citizenship regarding the level of teaching and the years of experience. This test extended the results obtained through the Mann-Whitney U test that aimed at comparing the differences between the offered variables.

Validity

Validity denoted "the strength of our conclusions, inferences or propositions" (Kothari, 2004, p. 165). It was important to ensure that all quantitative measures were able to measure or test what they were intended to measure the appropriate conditions (internal validity), and that the findings of the study could be applied to a wider population or situation (external validity). The survey was reviewed by a content expert to ensure each prompt was aligned with valid content from the field. The researcher ensured the validity of quantitative measures by reviewing available literature to understand the main tenets of Al-Zahrani's questionnaire.

Reliability

Reliability denoted "the consistency of your measurement, or the degree to which an instrument measures the same way each time it is used under the same condition with the same subjects" (Kothari, 2004, p. 167). In addressing the issue of reliability, quantitative researchers employed strategies "to show that, if the work were repeated, in the same context, with the same methods and with the same participants, similar results would be obtained" (Shenton, 2004, p. 71). The researcher ensured the reliability ensuring that the main items that were included in the instrument had the capacity to get similar results if the questionnaire was administered to a similar sample (Creswell, 2003). In this study, reliability statistics was obtained using the Cronbach's alpha coefficient that indicated acceptable internal consistency levels exceeding 0.7 (Pallant, 2007).

Potential Limitations

Limitations were defined as potential weaknesses and challenges in the study that were outside the control of the researcher (Creswell, 2003). One of the main limitations

of the study was that the researcher was unaware of the problems associated with traditional methods or techniques "as they are modified in a mixed methods environment" (Bazeley, 2004, p. 9). Another limitation dealt with the religious and cultural landscape of Saudi Arabia, where research was consistent that the mainstream religious and cultural beliefs significantly influenced perceptions related to use of technology and establishing responsible and safe use behaviors online (Al-Zahrani, 2015). The first limitation was by ensuring an in-depth coverage of the methodological designs that was used in the study, while the limitation of religious and cultural beliefs was addressed by ensuring that the participants were prepared prior to the commencement of the data collection exercise in order to address these issues. If such limitations surfaced during the research process, the researcher adjusted the process in order to collect the depth of data needed to respond to the research questions. An example of such a modification that was offered could be the possibility of hiring a female research assistant to conduct interviews with female participating.

Delimitations

Study delimitations were defined as "those characteristics that limit the scope and define the boundaries of your study" (Mitchell & Jolley, 2013, p. 196). Some of the delimitations that affected the study included the choice of variables of interest (Ribble's characterization and demographic characteristics), the choice of the research questions (concurrent triangulation as opposed to exploratory), and the choice of the theoretical framework (the theory of planned behavior, as opposed to other technology adoption and use theories such as the Unified Theory of Acceptance and Use of Technology). It was important to note that other approaches could have been used to explore the extent of

comprehension and knowledge of digital citizenship among Saudi Arabia teachers. The participants who enrolled in the study had to be duly certified Saudi Arabia teachers providing teaching experiences to K-12 students in any part of the Kingdom.

Summary

The purpose of the mixed methods study was to gather qualitative and quantitative data, interpret findings, and explore the extent of comprehension and knowledge of digital citizenship among Saudi Arabia teachers. Specifically, the study aimed to employ the concurrent triangulation research design and to collect both qualitative and quantitative data in a mixed-methods approach with the view to comparing the results and corroborate quantitative and qualitative information about such phenomenon as the expanse of digital citizenship awareness of Saudi Arabia teachers based on Ribble's characterization of respect, educate, and protect.

Participants for the proposed study comprised four male teachers for the qualitative study and 361 teachers of K-12 students for the quantitative study. Qualitative data for the study were gathered through Skype video interviews, while quantitative data were collected using standardized questionnaires administered to a convenience sample of Saudi teachers practicing in K-12 contexts. The data were not collected until institutional review board (IRB) had been approved by the University (see Appendix E). The data collected from this study were subjected to quantitative and qualitative data analysis techniques for categorization and analysis in order to provide responses to the key research questions in terms of findings.

CHAPTER IV

RESULTS

Introduction

This study sought to examine the scope of perceptions of digital citizenship awareness among Saudi Arabia teachers based on Ribble's categorization of respect, educate, and protect. This chapter presents the findings of the study based on the research approaches used to collect field data (qualitative and quantitative) and the research questions that guided the research process. Specifically, the first section of this chapter presents the qualitative findings based on the techniques and approaches described in the previous chapter. The second section of this chapter presents the quantitative findings, including an explanation of the normality of data and why non-parametric tests (Mann-Whitney U and Kruskal Wallis H test) were used in this research study.

Description of the Setting and Participants

A semi-structured interview guide was administered to four male teachers using the Skype software framework with the view to identifying the perceptions of Saudi Arabia teachers on digital citizenship based on Ribble's categorization of respect, educate, and protect. The interviews lasted for between 30 and 45 minutes, and aimed to help the researcher extract qualitative data, which could be used to show the perceptions of digital citizenship awareness among Saudi Arabia teachers based on Ribble's themes of respect, educate, and protect. On the other hand, a quantitative online survey was

administered to 550 instructors teaching at various elementary, middle, and high schools within Saudi Arabia with the view to investigating if there is a significant mean difference among levels of digital citizenship awareness based on the independent grouping variables of gender, level of teaching, and years of experience. The demographic characteristics of the participants who took part in the quantitative study are presented in the section detailing the quantitative findings.

Research Questions

The analyses done on this chapter were based on the stated research questions, which were as follows:

Q1 What are the perceptions of digital citizenship awareness among Saudi Arabia teachers based on Ribble's categorization of respect, educate, and protect?

Q2 awareness among Saudi Arabia teachers based on Ribble's categories of respect, educate and protect in relation to the following set of research sub-questions:

a. What are the descriptive statistical levels of digital citizenship awareness for Saudi Arabia teachers based on Ribble's categories of respect, educate, and protect?

b. Is there a significant mean difference on digital citizenship awareness based on the gender of the teacher?

c. Is there a significant mean difference on digital citizenship awareness based on the teachers' level of teaching (elementary, middle, and high school)?

d. Is there a significant mean difference on digital citizenship awareness based on the teachers' years of experience?

The first research question was addressed by qualitative analyses of interview responses received from four Saudi Arabia male teachers via the Skype interview protocol. The first component of the second research question was addressed by

undertaking a quantitative analysis of the descriptive mean (average) scores demonstrated in the categories of respect, educate, and protect. The second component of the second research question was addressed through the quantitative analysis (Mann-Whitney U test) of the average scores of Ribble's categories of respect, educate, and protect based on the independent grouping of gender (male and female). The third component of the second research question was examined through the quantitative analysis (Kruskal Wallis H test) of the average scores of Ribble's categories of respect, educate, and protect based on the independent grouping of grade level of teaching (elementary, middle, and high school). Lastly, the fourth component of the second research question was examined through the quantitative analysis (Kruskal Wallis H test) of the average scores of Ribble's scores of respect, educate, and protect based on the independent grouping of years of experience (1-10 years; 11-20 years; and 20 or more years).

Qualitative Data Analysis

Background

Qualitative data received from the four participants were transcribed as outlined in the previous chapter, after which the overarching responses were filtered and grouped into the three themes of Ribble's model, namely respect, educate, and protect. The semi-structured interview guide used to collect the qualitative data included seven main questions, as follows: (a) In your own words, describe what digital citizenship means, (b) Describe an example of a teacher behaving irresponsibly or unethically with regards to technology use, (c) Why do you think it is important for teachers to be good digital citizens?, (d), Describe an example of an elementary or high school student violating the norms of digital citizenship, (e) How can teachers teach their students to be good

citizens?, (f) How do you think you will be expected to model and teach digital citizenship in the future?, and (g) Is there anything else you would like to say regarding digital citizenship?

As already mentioned, participant responses to the seven questions and other sub-questions that intended to seek for clarifications were reviewed and grouped according to how they showed a viable demonstration of digital citizenship awareness based on Ribble's categories of respect, educate, and protect. Specifically, the responses were grouped according to the overarching themes of Ribble's model namely respect, educate, and protect. Though continued analyses of the qualitative data, three categories were identified as fitting under the first theme of protect, three categories were identified as fitting under the second theme of educate, and another three categories were identified as fitting under the third theme of protect. Additional analysis of each of the conceptual categories allowed the researcher to itemize the qualitative data into different units, each based on a unique category as described in this section. The ensuing narrative of interview findings corresponds to the first research question that was formulated to guide the research process, as follows:

Q1 What are the perceptions of digital citizenship awareness among Saudi Arabia teachers based on Ribble's categorization of respect, educate, and protect?

Theme A: Respect

To develop a comprehensive understanding about the perceptions of digital citizenship awareness among Saudi Arabia teachers based on Ribble's theme of respect, participant responses were categorized according to the categories of the respect theme of Ribble's model, namely etiquette, access, and law. Further analyses of the mentioned

categories revealed core attitudes, values and beliefs that informed digital citizenship awareness among Saudi teachers based on Ribble's theme of respect. These attitudes, knowledge, values, and beliefs were grouped into units with the view to developing an in-depth understanding of digital citizenship awareness among Saudi Arabia teachers based on Ribble's theme of respect. See Table 2 for the display of Theme A (Respect), categories (etiquette, access, and law), and units.

Table 2

Analysis of Theme A (Respect)

Categories	Units
A1: Etiquette	A1a: Using technology in ways that minimize the negative effects on other users
	A1b: Using technology in a contextually appropriate manner
	A1c: Using culture and religion to guide proper technology use
A2: Access	A2a: Equitable access of technology for all individuals
	A2b: Accommodations for individuals with special needs and others in remote areas of the country
A3: Law	A3a: Knowing the identity of online users
	A3b: Sharing forbidden sites
	A3c: Using unknown Internet sources

Category A1: Etiquette. Participant responses to the seven interview questions demonstrated adequate understanding and awareness of how technology should be used in ways that fulfill the etiquette category of Ribble's theme of respect. Specifically, the respondents showed awareness of digital citizenship in terms of (a) using technology in ways that minimize the negative effects on other users, (b) using technology in a

contextually appropriate manner, and (c) using culture and religion to guide proper technology use.

Unit A1a: Using technology in ways that minimize the negative effects on other users. The four participants demonstrated adequate understanding and knowledge about the need for the adoption of ethical standards and value systems that enable individuals to use technology in ways that reduce the negative effects on other users. Participant 3, for example, described digital citizenship as follows:

> The concept of digital citizenship for me is the optimum use of technology associated with the Internet networks in polite and fruitful ways for me and others . . . [People who use] social networking sites or comment on the News or Blogs should [ensure they are] polite and [use] inoffensive ways to [communicate] with others while respecting the views of others. Also, it includes the application of good morals . . .

The concept of ethical use of technology applications in digital context was underscored by participants as one of the remedies that could be used by people to not only prevent harming technology users, but also to develop the capacity to take full advantage of the opportunities presented by technology in contemporary times. From the responses received from the participants, it became clear that ethics and morals were critical components that formed the perceptions of Saudi Arabia teachers on how technology could be used in ways that aimed to reduce the potential to adversely affect other technology users in learning and social contexts. Participant 4, for example, described digital citizenship as follows:

> Digital citizenship is the best way to use the technology and take advantage of them in a way serving all segments of all ages and in all aspects of life…[It also entails avoiding] unethical use and [developing familiarity] with the principles and norms that are offensive to the person in particular and society in general . . .

Unit A1b: Using technology in a contextually appropriate manner. All participants demonstrated a perception that technology was used in a contextually appropriate manner by, for example, staying away from suspicious websites that may harm society, desisting from filming others without their consent, and using self-censorship strategies when interacting with others in online contexts. Overall, the responses received from the participants were effective in underscoring the importance of using technology in a contextually appropriate manner through the adoption of the mentioned strategies. Participant 3, for example, also believed that digital citizenship also entailed staying: "away from suspicious websites that may harm our society."

Additionally, when they were asked to provide an example of an elementary or high school student violating the norms of digital citizenship, Participant 3 responded as follows:

> [The example includes] a student filming another student in the classroom without permission. . . . [Also, another example concerns] students filming their teachers in the classroom without permission.

The self-censorship element was described by Participant 2, who responded as follows when they were asked to explain how he will be expected to model and teach digital citizenship in the future:

> In the beginning, I have to explain to them that . . . technology is a double-edged sword and then [put] a stronger [emphasis] on self-censorship . . . based on the Islamic religion.

Overall, the described participant responses provided enough proof to demonstrate that the sampled interview respondents were increasingly aware of the need to use technology in a contextually appropriate manner by staying away from suspicious

websites that may harm society, desisting from filming others without their consent, and using self-censorship strategies when interacting with others in online contexts.

Unit A1c: Using culture and religion to guide proper technology use. All participants underscored the need for Saudi teachers and students to use technology in alignment with existing cultural standards and in accordance with the teachings of Islam. Some of the participants were categorical that electronic teaching aids should comply with the Islam culture and religion to reduce situations in which students were exposed to harmful content. For example, when they were asked to describe an example of a teacher behaving irresponsibly or unethically with regards to technology use, Participant 2 responded as follows:

> [The] English teacher introduced the film to the students to gain language skills. [However], as the teacher had not seen the video before, [he ended up] exhibiting bad shots in front of the students. It [is] better to be choosing the right video to display in front of students. Also, [a teacher] who transfers Internet information [from] unknown origin and [do] not take into account [the] efficacy or the health of the sources [may end up exhibiting] erroneous religious videos [that are] contrary to Islamic religion.

The issues of religion and culture were also mentioned within the context of acting as a guide for the reinforcement of positive technology use behaviors. Indeed, several participants underscored the need for teachers and students to reflect upon their cultural, religious, and societal values when using technology applications and tools with the view to ensuring that they project proper use behaviors that did not interfere with other digital users or lead to harmful consequences. For example, when they were asked to explain what he thought would be expected to model and teach digital citizenship in the future, Participant 1 responded as follows:

> Of course, technology use ideally falls under the rules and regulations and the principles and customs, culture and religion. So, if [all these components are available, technology can be used in a positive way]… [However, if users] violate any part of the custom, tradition or religion or culture, [then] we should recognize that use will lead to harmful consequences.

When it was requested to explain what he thought was expected to model and teach digital citizenship in the future, part of the response provided by Participant 2 was as follows: "[I will guide students on how to use] technology properly by making Islamic religious principles geared for all their actions."

Overall, the described responses showed that participants were increasingly aware of the role of culture and religion in guiding or reinforcing proper technology use behaviors among Saudi teachers. These responses showed that Saudi teachers relied on cultural values and Islamic religious beliefs to develop digital citizenship skills that could be used to not only reinforce positive digital footprints, but also to encourage constructive technology use behaviors in school and social contexts. The realization that technology could fall under the precepts of culture and religion showed the teachers' perceptions of digital citizenship as something that should be controlled by the norms and value systems governing the Saudi culture and the Islamic religion in order to achieve positive use behaviors.

Category A2: Access. Participant responses to the seven interview questions demonstrated some level of understanding and awareness on how the notion of digital citizenship could be used within the Saudi educational context to fulfill the access category of Ribble's theme of respect. The overarching units that were identified upon further analyses of the qualitative data included (a) equitable access of technology for all

individuals and (b) accommodations for individuals with special needs. These units are discussed below.

***A2a: Equitable access of technology for all individuals*.** Some of the participant responses demonstrated awareness about the need for various forms of technology used in learning and social contexts to be accessible to all groups of the Saudi population. It was also clear that some of the participants demonstrated awareness on the importance of ensuring that the benefits accruing from digital citizenship are distributed to all members of the society. For example, when they were asked to describe what digital citizenship entails, part of the response provided by Participant 4 was as follows: "Digital citizenship is the best way to use technology and take advantage of them in a way serving all segments of all ages."

Some of the participants dealt with the issue of equitable access by underscoring the need for every student to have the opportunity to learn from teachers who had an adequate understanding of how to use technology with the view to not only enhancing learning experiences at the classroom level, but also guiding students on proper technology use behaviors in social contexts. When students were denied such an opportunity, it became challenging to achieve equitable access of technology for all individuals irrespective of the fact that the relevant stakeholders could provide students with technology devices and connectivity. When they were asked why he thought it was important for teachers to be good digital citizens, Participant 1 had this to say:

> No doubt that the teacher is a breeder and [an educator] before learning. So, if the teacher is the optimal teacher of the student, [something like] a role model, then the student will follow suit in order to take advantage of the technology available and the establishment of a valid digital generation.

The above response demonstrated the perception that teachers played an important role in ensuring equitable access to technology by role-modeling proper use behaviors and providing their students with the opportunity to learn from them on how to take advantage of the available technological applications both for learning and interacting in online contexts.

A2b: Accommodations for individuals with special needs. One participant showed adequate understanding of the need for students with special needs to have access to technological applications for learning and interacting in social contexts. It was also evident that this participant had adequate knowledge on how teachers can use the Internet to help students with special needs to develop the needed competency in using technological applications for learning. When they were asked to explain how teachers could teach their students to become good digital citizens, Participant 2 responded as follows:

> [Teachers] can teach students with special needs and those without adequate knowledge about technology by relying on the Internet to explain the lessons and solving assignments and tests and [providing] feedback. . . . [Teachers should] give them homework assignments [and base] their answers on the Internet search. [Teachers should] also ask the students to do research online for one of the topics of study.

Category A3: Law. An analysis of the participant responses to the seven interview questions led to a demonstration of the values and beliefs portrayed by Saudi teachers when it comes to the Law's category of Ribble's theme of respect. The responses underscored an adequate level of knowledge and understanding of Ribble's category of law, with the resulting analyses being grouped in terms of (a) knowing the identity of online users, (b) sharing forbidden sites, and (c) using unknown Internet

sources. These analyses were formed the units that expounded on Ribble's category of law.

A3a: Knowing the identity of online users. Two of the four participants demonstrated adequate knowledge and understanding of the need for individuals to know the identity of those who were interacting with in online contexts with the view to minimizing the possibility for harmful consequences. For example, when they were asked to explain what he thought would be expected to model and teach digital citizenship in the future, Participant 1 responded as follows:

> Of course, any person gets or [receives] an email on his device. Of course, this is proof on behalf of the sender. Everyone has to make sure [they know the identity of] who sent email and the [details] of the sender. There are many issues related to electronic crimes nowadays, so [it is important not to receive any email or messages] from any unknown person in online [contexts].

Participant 3 expounded on this fact by demonstrating how Internet users use anonymous IDs to harm other unsuspicious users in online contexts. When they were asked to describe any other thing he would like to say regarding digital citizenship, this participant responded as follows:

> There is a lot of [difference] between reality and technology. Sometimes a person may enter an anonymous ID [that is] separated from the actual reality [with the view to indulging] in the harm of others. [Such behavior] is a far cry from [the good morals that individuals should demonstrate when] growing up [by desisting from using] an anonymous ID.

A3b: Sharing forbidden sites. Two of the four respondents' demonstrated adequate knowledge and understanding of the dangers involved when students accessed forbidden sites on the Internet or when students shared harmful content in social networking platforms such as WhatsUp, Facebook and Twitter. The perceptions held by these participants underscored the role of teachers in guiding their students on how to

desist from sharing or accessing forbidden sites or harmful content when using technology for learning or socialization processes. The knowledge and understanding of the harmful effects associated with sharing forbidden sites were best depicted by Participant 1, who responded as follows upon being asked to describe an example of an elementary or high school student violating the norms of digital citizenship:

> Of course, [based on experience, it is evident that] we find students with mobile phones and . . . many video [files]. The problem is that students share these things, and even if [they are] not present among the [students, it is common to] find them asking for [these things] from others to enjoy. And it is obvious that the teenagers are looking for things [that are] forbidden.

The knowledge of guiding students about the dangers of sharing forbidden sites in online contexts was demonstrated by Participant 2, who responded as follows upon being asked to explain what he thought would be expected to model and teach digital citizenship in the future:

> Then I [will be asking the students] that have benefited them in the search for answers, and I [will also guide] them [on] the correct way and [warn] them of suspicious sites. . . . Also, [I will urge] the students to practice on a daily basis and [guide] them [on] the right path and introduce them to the dangers resulting [from] sharing forbidden sites and [using] the Internet in a [sinister/evil] way.

A3c: Using unknown Internet sources. Another unit that precipitated the law category of Ribble's theme of respect concerned the use of unknown Internet sources, whereby two participants demonstrated an adequate level of knowledge and awareness of the dangers that students and teachers may experience when they visit/use unknown Internet sources or transfer Internet information from unknown sources. For example, when they were asked to describe an example of a teacher behaving irresponsibly or unethically with regards to technology use, part of the response provided by Participant 2 was as follows:

> Also, such as the transfer of information from the Internet of unknown origin and [do] not take into account their efficacy or the health of the sources, such as some erroneous religious videos [that are] contrary to Islam religion.

Participants 1, 3 and 4 also underscored the need for teachers to guide their students on how to identify unknown Internet sources and the potential harmful effects that students may experience by using unknown Internet sources, including the capacity to be attacked by viruses and propensity to lose critical personal information to web fraudsters. Such demonstration of knowledge and awareness of the potential dangers that could arise because of using unknown Internet sources was a good indicator of how Saudi teachers were increasingly internalizing and applying important components of digital citizenship in both learning contexts and socialization arenas.

Theme B: Educate

To develop a comprehensive understanding on the perceptions of digital citizenship awareness among Saudi Arabia teachers based on Ribble's theme of educate, the responses provided by the participants were analyzed using the qualitative techniques described on Chapter III and then grouped together according to how well they fitted into the Ribble's categories for the theme of educate, namely communication, literacy and commerce. Further analyses of the stated categories ensured that data were grouped into units of similar core attitudes, values and beliefs that informed the identified perceptions of digital citizenship awareness among Saudi Arabia teachers based on Ribble's theme of educate and the ensuing categories. See Table 3 for the display of Theme B (Educate), categories (communication, literacy, and commerce), and units.

Table 3

Analysis of Theme B (Educate)

Categories	Units
B1: Communication	B1a: Using technology tools (e.g., email; cell phones; personal video calls) to communicate
	B1b: Role-modeling good communication practices in online contexts
B2: Literacy	B2a: Learning the digital basics
	B2b: Evaluating online resources to determine the accuracy and trustworthiness of content
	B2c: Exploring and developing online learning modes
B3: Commerce	B3a: Online buying and selling through commercial sites

Category B1: Communication. Participant responses to the seven interview questions reinforced some level of understanding and awareness of digital citizenship among Saudi Arabia teachers based on the communication category contained in Ribble's theme of educate. Specifically, the respondents showed some level of understanding and awareness of digital citizenship based on the following units: (a) Using technology tools (e.g., email, cell phones, and personal video calls) to communicate and (b) role-modeling good communication practices in online contexts.

B1a: Using technology tools (e.g., email, cell phones, and personal video calls) to communicate. All the participants demonstrated an adequate level of understanding and awareness on how teachers and students could use technology tools such email, cell phones, and WhatsUp applications to communicate and learn in online contexts. The teachers also demonstrated some level of understanding and awareness of how these technology tools could lead to harmful outcomes if proper use behaviors were not

safeguarded. For example, when they were asked to describe an example of a teacher behaving irresponsibly or unethically with regards to technology use, Participant 1 responded as follows:

> Well, based on my previous experiences, there is a position I have in mind now. [This position entails the fact that] some of the teachers use technology applications such as WhatsUp to socially communicate with students. [The teachers] start to exchange [information] and participate between themselves and [their] students. [Through extensive use of these applications to] send and receive information from the teachers, [the students may] end up receiving [information] which is inappropriate for their age [as they may not have the knowledge and skills required to comprehend the information].

In another response to the same question, Participant 1 showed adequate understanding and awareness of the trajectory that leads to exchanging age-inappropriate/bad/unethical messages and/or information with students using technology applications such as WhatsUp to communicate. This awareness was best depicted when the participant responded as follows:

> Of course in the beginning there is respect and appreciation, but with daily or continuous communication or even if it was by mistake, there will be unethical messages [communicated between the teacher and the students]. The messages [underscore a] lack of respect for the teacher [as students start viewing the teacher] as a friend or a brother or a fellow [who could be joked with]. [The students may go further to use the available communication tools] to exchange with the [teacher] public speech without any limits and without any restrictions.

B1b: Role-modeling good communication practices in online contexts. All the participants showed adequate levels of knowledge and awareness of digital citizenship, particularly within the realm of teachers undertaking the function of role-modeling good communication practices and behavior for use in online contexts for learning and socialization. Specifically, most of the participants said that they would role-model good communication practices in online contexts by explaining to students the benefits of proper use of technology, instructing students on best behavior in technology use, guiding

students not share outlawed sites, and helping students to become better citizens. For example, when they were asked why he thought it was important for teachers to be good digital citizens, Participant 3 responded as follows:

> Because the teacher is a role model for others. . . . And he must be an example of the digital citizen who [should be] emulated [by students]. Because digital citizenship must start from the teacher so that he can affect others and [assist] to build a perfect relationship with his students [through] digital emulation.

Category B2: Literacy. Participant responses to the seven interview questions showed a high level of understanding and awareness of digital citizenship based on the literacy category of Ribble's theme of educate. Further analyses and grouping of data in this category resulted in the development of three units that highlighted the perceptions of Saudi teachers toward digital citizenship awareness, namely learning the digital basics, evaluating online resources to determine the accuracy and trustworthiness of content, and exploring and developing online learning modes. These findings are presented as follows:

B2a: Learning the digital basics. All the participants underscored the need for teachers to take the leading role to ensure that students were provided with the capacity to learn about the digital basics by helping them to keep pace with new technological shifts, develop competency in linking various technological and scientific fields, understand the pros and cons of Internet use, and internalize proper use behaviors. Students also need to be educated on the dangers associated with improper use of technology and the importance of technology (e.g., saving time and effort) in contemporary contexts. Here, the level of knowledge and awareness of digital citizenship was best depicted by Participant 3, who responded as follows when they were asked to describe how teachers could teach their students to become good digital citizens:

> I think [it is better to explain to] the students about the pros and cons of Internet use that might benefit them and the society. Also, give examples [of how] digital citizens [use] technology correctly and how their optimum use [of technology] benefited them [and others in the society]. Also, [it is] possible to create a Facebook page and have all the students involved in this page and watch them and make them apply the principles of optimal use of technology.

When they were asked to describe how teachers could teach their students to become good digital citizens, Participant 4 had this to say: "Clarify the pros and cons of the use of technology in general and then enhance it with some tips for maintaining optimal use."

Knowledge and awareness of digital citizenship in this unit were also exhibited in terms of participant responses that underscored the importance of providing teachers with additional training on digital citizenship, the need to ensure that the society in general and parents in particular take an active role in educating children on good morals for technology use and how to make proper use of social networking platforms such as WhatsUp and Facebook, as well as the need for people to be made aware of the importance of technology in saving time and effort. When they were asked to provide any other comments on digital citizenship, part of the response provided by Participant 3 was as follows:

> I think . . . digital citizenship is the responsibility of the entire community and not just the school. The parents have the biggest role in making the children good digital citizens . . . by [connecting] the good morals [they receive when] growing up [with the] use of technology.

B2b: Evaluating online resources to determine the accuracy and trustworthiness of content. Two of the four participants demonstrated sufficient knowledge and awareness of digital citizenship according to this unit of Ribble's category of literacy and theme of educate by arguing that teachers should be at the forefront in educating and guiding students on how to evaluate the accuracy and

trustworthiness of online sources using the Islam religion and existing cultural and societal values as the standard. Participant responses also showed that teachers could take a proactive role in assisting students to evaluate the trustworthiness and accuracy of online sources by providing viable examples of appropriate technology use with the view to reinforcing behavior. For example, Participant 4 responded as follows when they were asked to clarify the importance of teachers to become better digital citizens:

> [Teachers should develop the capacity] to explain the lesson and relate it to the original sources based on their accuracy and trustworthiness, send and receive the project, communicate with . . . students in the educational process, [and] send queries and emails. All this requires the teacher to be a [good] digital citizen primarily to help students to [become good] digital citizens [by] grooming [them] to [develop the capacity to use digital citizenship in wider contexts] in various spheres of life.

B2c: Exploring and developing online learning modes. All the four participants demonstrated sufficient knowledge and understanding of how teachers should develop the capacity to explore and develop online learning modes for their students by, for example, encouraging the use of technology to learn and conduct online research, encouraging active participation in online contexts to ensure students learn about the principles related to the optimal use of technology, and involving students in online study groups to facilitate effective communication and exchange of information. When they were asked to explain how teachers could teach their students to become better digital citizens, part of the response provided by Participant 4 was as follows:

> Secondly, [it is important to involve] all students in online study groups, which lead them to communicate with all the class and the teacher to exchange the information related to the class.

When they were asked to explain how teachers could teach their students to become better digital citizens, Participant 2 responded as follows:

> [It is important for teachers to] encourage students to [use] technology by linking their morals to their religion [as well as] the homeland community digitally. [It is also important for teachers to rely] on the Internet to explain the lessons and [solve] assignments, [administer] tests and [provide] feedback. [Teachers should] give homework assignments basing their answers on the Internet search [and] ask students to do research online for one of the topics of study.

Category B3: Commerce (online buying and selling through commercial sites). Two of the participants demonstrated knowledge and awareness of the commerce category contained in Ribble's theme of educate. The unit that was identified from further analysis of the quantitative data for this section was online buying and selling through commercial sites, including the benefits that accrue from such sites.

Participant 1 demonstrated adequate knowledge and awareness of electronic commercial websites and how they could be used to save time and effort, while Participant 3 underscored the need for individuals to commence using websites such as Amazon and Alibaba to save on costs, time and effort. When they were asked to explain how teachers could teach their students to become better digital citizens, part of the response provided by Participant 1 was as follows:

> As for electronic commerce website, this is provided to people in general, by saving time and effort to get any goods or any purpose they want, either through some sites like Amazon or eBay or something like that. These sites made it easier for them to get to get what they want as quickly [as possible] and at the lowest cost.

Theme C: Protect

To develop a comprehensive understanding of the perceptions of digital citizenship awareness demonstrated by Saudi Arabia teachers based on the Ribble's theme of protect, the responses provided by the respondents were analyzed according to the qualitative techniques described in the previous chapter and then grouped into the categories of rights and responsibilities, safety or security, and health and wellbeing, as

espoused in the theme of protect in Ribble's model of digital citizenship awareness. Further syntheses and analyses of the qualitative data enabled the researcher to group the data into unique units based in Ribble's theme of protect and the attendant categories. See Table 4 for the display of Theme C (Protect), categories (rights and responsibilities, safety or security, and health and wellbeing).

Table 4

Analysis of Theme C (Protect)

Categories	Units
C1: Rights and responsibilities	C1a: Following acceptable technology use rules and policies
	C1b: Using online material/content ethically
	C1c: Role of parents and the community in reinforcing the rules for proper use of technology
C2: Safety or security	C2a: Ensuring personal security in online contexts
	C2b: Ensuring the security of computer systems
C3: Health and wellbeing	C3a: Reducing addiction to the Internet/video games

Category C1: Rights and responsibilities. Participant responses to the seven interview questions posed by the researcher to the respondents demonstrated some level of understanding and awareness of digital citizenship in the Saudi context based on the category of rights and responsibilities, which forms a critical component of Ribble's theme of protect. Further analyses and grouping of the qualitative data that fitted this category resulted in the identification of three units that highlighted the perceptions of Saudi Arabia teachers toward digital citizenship awareness, namely (a) following acceptable technology use policies and regulations, (b) using online material/content

ethically, and (c) understanding the role of parents and the community in reinforcing the rules for proper use of technology. These findings are presented as follows:

C1a: Following acceptable technology use rules and policies. All the four participants demonstrated some level of understanding and awareness of how the use of technology applications for learning and/or socialization should be intrinsically tied to a set of rules and standards of behavior that determine or guide proper use. The participants underscored the need for students and teachers in the Saudi context to follow the established rules, standards and policies of acceptable technology use if they were to receive positive outcomes from using the various technology applications. The knowledge and awareness of the need to follow acceptable technology use rules and regulations were best depicted by Participant 1, who responded as follows when they were asked to describe in his own words what digital citizenship actually means:

> Digital citizenship is a set of rules and standards under the umbrella of the religion, culture, and education [that makes sure that] a person is [able] to use technology in an easy and perfectly wholesome [way].

This view was reinforced by Participant 2, who responded as follows when they were asked to describe in his own words what digital citizenship actually entails:

> It is a set of rules and regulations, standards, and continual dealing with technology. It is the use of the Internet properly in a positive manner and the use of social media in [a way] that lead to [the] benefit [of] the country.

Similarly, when they were asked to describe what he thought would be expected to model and teach digital citizenship in the future, Participant 3 demonstrated awareness of the rules and policies that guide proper use of technology by responding as follows:

> [I am expected to follow] conventional rules, regulations, and principles of proper technology use, particularly as it pertains to our cultural values and the expectations of the Islamic religion.

Overall, these responses demonstrated that the participants were increasingly aware of the fact that digital citizenship revolved around a set of rules and standards that enable individuals to use technology applications in a constructive and beneficial manner. However, it was important to note that Participant 1 appeared to question the concept of digital citizenship in a subsequent question asked to clarify earlier responses to the question on what he felt would be expected to model and teach digital citizenship in the future. His response was as follows:

> In fact, depending on my experience and according to what I [have] experienced in school, there is no concept of digital citizenship. It may be very weak or non-activated [at all]. Many students are unaware of many of the rights, duties, and rules that must be followed to be a valid digital and ideal citizen at the same time. I believe that awareness in this aspect [is a] necessary task.

C1b: Using online material/content ethically. Two of the participants demonstrated sufficient knowledge and awareness of incidences that lead to the unethical use of online material or content as they go against the established rights and responsibilities for responsible use. These incidences touched on using technology responsibly in learning and socialization contexts, citing online sources according to the laid down rules and procedures, and requesting for permissions. The incidents mentioned by the participants included engaging in plagiarism, practicing electronic fraud, using technology tools to monitor students without their consent, filming others without their consent, as well as failing to comply with set regulations and standards on proper use of technology. For example, when they were asked to describe an example of a teacher behaving irresponsibly or unethically with regards to technology use, Participant 4 responded as follows:

> . . . some teachers are monitoring the students unethically [due to a misplaced] belief that the students use technology negatively. . . . For example, some teachers in the computer lab use some software to control all devices in front of every student and this is [some type] of espionage. . . . [On the contrary], the teacher [should] encourage ethical rules, guidelines, [and] principles in the use of technology [by desisting from undertaking student] surveillance.

Similarly, when they were asked to describe an example of an elementary or high school student violating the norms of digital citizenship, Participant 2 responded as follows:

> It is natural that there will be irregularities in the use of technology by all. When students are asked to do a research study for a class, [some of them] copy the information from the Internet as it is without reference to scientific references. Also, [some of the students are known to practice] fraud using [their] mobile phones.

When they were asked to respond to the same question, Participant 3 demonstrated her knowledge and awareness of this core unit of digital citizenship by stating the following:

> For example, [some] students film other students in the classroom without their permission. Also, [some students] film their teachers in the classroom without permission.

Lastly, Participant 4 responded as follows when she was asked to describe an example of an elementary or high school student violating the norms of digital citizenship:

> Some teachers allow students to use technology in the classroom to search for a subject. For example, in a voice lesson, [the teacher] often asks students to access some applications or websites that strengthen pronunciation, but what is happening [is] that there are a few students [who] do not comply with the orders and the use of technology. [These students] play or chat or visit sites [that are] not related to the topic.

C1c: Role of parents and the community in reinforcing the rules for proper use of technology. Three of the four participants underscored the important role of parents and the community in reinforcing the rules and standards for proper use of technology applications in the learning context or when socializing. The participants were clear that the community in general and parents in particular had an important role to play in

influencing, guiding, and encouraging students to adopt ethical behaviors, rules, and standards in order to benefit from positive use of technology applications. Specifically, these participants insinuated that a partnership between the teacher, the parents, and the community was needed to guide students on the ethical use of online content and educate them about digital citizenship. For example, when they were asked to comment on anything else regarding the topic of digital citizenship, Participant 3 responded as follows:

> I think [that the issue of] digital citizenship is the responsibility of the entire community and not just the school. The parents have the biggest role in making children [to become] good digital citizens . . . by [connecting] the good morals they [internalize when] growing up [with the] use of technology.

When they were asked to respond to the same question, Participant 4 showed adequate knowledge and awareness of the critical role of the community in facilitating digital citizenship by stating as follows:

> Digital citizenship is not confined to only the school, but beyond that. Digital citizenship is [a] community project based on all the institutions [and] organizations that are [expected to model proper use standards, behaviors and policies to] significantly produce digital citizens.

Category C2: Safety and security. The responses received from three of the four participants demonstrated some level of knowledge and awareness of digital citizenship based on the category of safety and security, which forms a core component of Ribble's theme of protect. Further analyses of the responses enabled the researcher to identify two units that fitted into the category of safety and security, namely (a) ensuring personal security in online contexts and (b) ensuring the security of computer systems and networks. The findings are presented as follows.

C2a: Ensuring personal security in online contexts. Participant responses from two respondents underscored the need for teachers to not only verify the accuracy of the sites they visited, but also to train and/or educate their students about the dangers involved in visiting unknown sources in online contexts. According to these participants, such unknown and suspicious Internet sources could compromise the personal security of teachers and students through incidences such as identity theft, phishing, and online stalking. For example, when they were asked to explain what he thought would be expected to model and teach digital citizenship in the future, part of response provided by Participant 2 was as follows:

> . . . then I am asking [the students] for sites that they have benefitted [from] in the search for answers, and I guide them [on] the correct way and warn them of suspicious sites.

C2b: Ensuring the security of computer systems and networks. One participant in the study demonstrated some level of knowledge and understanding on the effect of viruses on computer systems and what students need to do to ensure their computer systems and networks remain secure. When they were asked to explain how teachers could teach their students to be good digital citizens, part of the response provided by Participant 2 was as follows:

> . . . As for viruses, I would recommend that everyone keeps away from any suspicious site or any site that may harm them. It is important to ensure that [the accessed] site is the official site that benefits society in general and [is] free of viruses at the same time.

Category C3: Health and wellbeing (reducing addiction to Internet and/or video games). Only one of the four participants demonstrated some level of understanding and awareness of the dangers posed by the Internet to the health and wellbeing of users. The unit that was identified upon further analyses of the qualitative

data revolved around reducing Internet addiction and what teachers need to do to minimize such addiction. The response provided by Participant 2 was as follows:

> Urged the students to do good practice and guiding them to the right path and introduce them to the dangers resulting thereof in the situation of the use of the Internet in the sinner way.

In some of his responses, Participant 1 exhibited perception that seemed to insinuate that students could indeed become addicted to harmful Internet sites that could affect their health and wellbeing. According to this particular author, commercial websites provided the opportunity for students to engage in illicit online behaviors, such as gambling could turn fatal in terms of facilitating addiction and other negative compulsive behaviors. This participant further underscored the need for teachers and parents to use their available cultural values and the teachings of Islam to ensure that students are able to internalize proper use behaviors, which in turn minimizes addiction to harmful online content or materials.

When Participant 3 was asked how teachers could teach their students to be good citizens, part of his answer was as follows: "Encourage the students to technology by linking their morals to their religion, the homeland community digitally."

Quantitative Data Analysis

Background

A quantitative online survey was administered to 550 teachers with the view to investigating if there was a significant mean difference among levels of digital citizenship awareness for Saudi Arabia teachers based on gender, grade level of teaching, and years of experience. Quantitative data were collected from 361 of the 550 participants and analyzed using the available statistical procedures with the view to providing responses to

the stated research questionnaire. It was important to note that the questionnaire instrument was structured around Ribble's categorizations of respect, educate and protect, and the attitudes, knowledge, and perceptions of participants toward these categories were measured using a 5-point Lickert-type scale, from 1 = *Strongly Disagree* to 5 = *Strongly Agree*. In total, participants were exposed to 24 statements intended to measure their level of awareness to the "respect" category of Ribble's model, 11 statements intended to measure their level of awareness to the "educate" category of Ribble's model, and 11 statements intended to measure their level of awareness to the "protect" category of Ribble's model. It was also important to note that the quantitative data were analyzed and presented based on the stated research questions for the quantitative section of this research study.

Normality of Data and Choice of Non-parametric Tests

Three visual techniques (histograms, Q-Q plots and P-P plots) were used to visually observe if the quantitative data were normally distributed. In the histogram visual test, it was clear that the frequency distribution that plots the observed values against their frequency failed to achieve a bell-shaped distribution, meaning that the data were not normally distributed. In the Q-Q and P-P plots which schemes the cumulative probability or quartile of a variable against the cumulative probability or quartile of an expected normal distribution, it was evident that the resultant visuals did not achieve a straight diagonal line that characterize normally distributed data sets. The results of the Q-Q and P-P plots reinforced the perspective that data for this study were not normally distributed (see Figures 3 through 8).

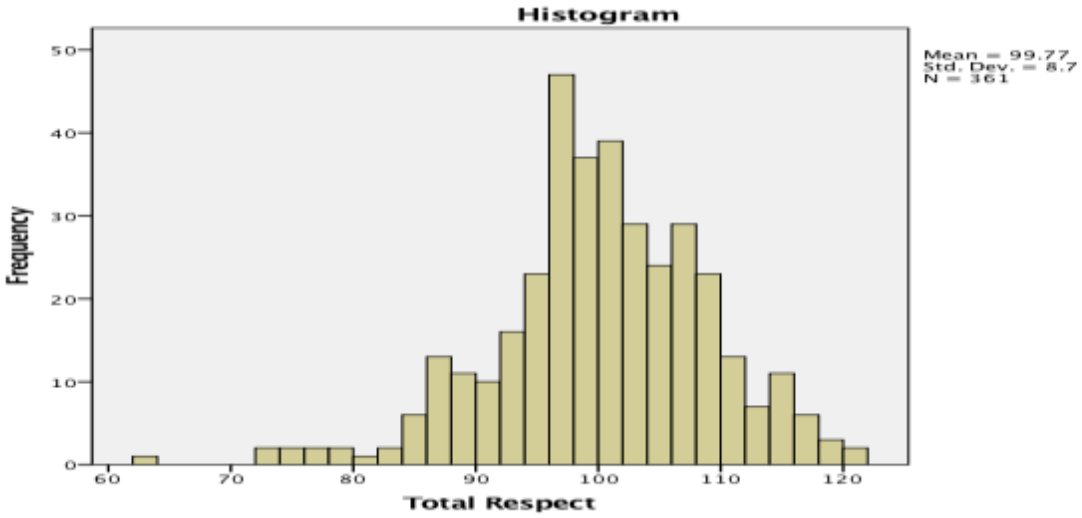

Figure 3. Normally distributed histogram for respect.

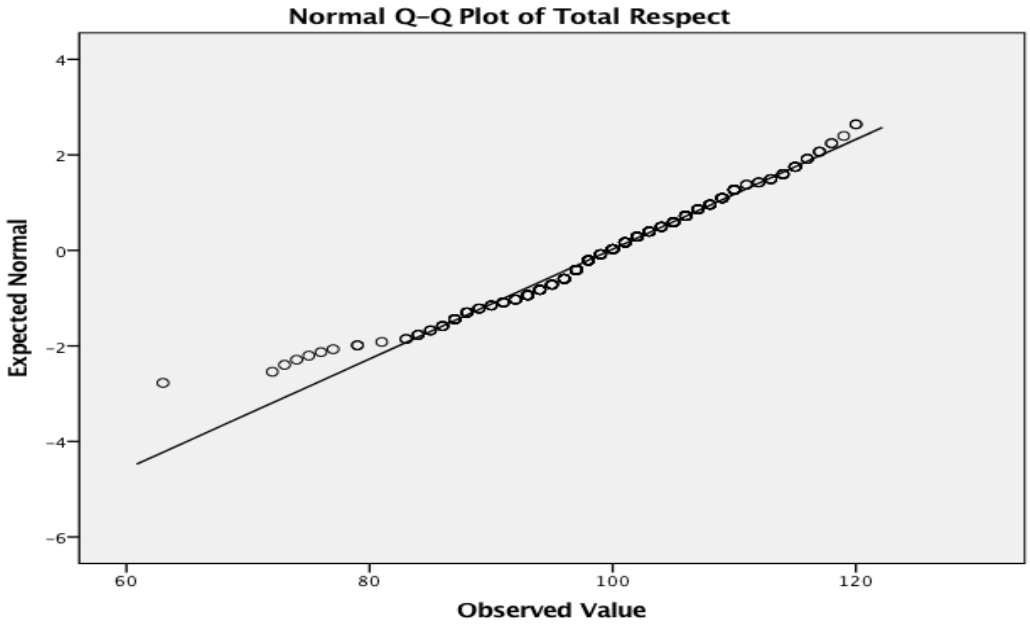

Figure 4. Normally distributed Q-Q plot for respect.

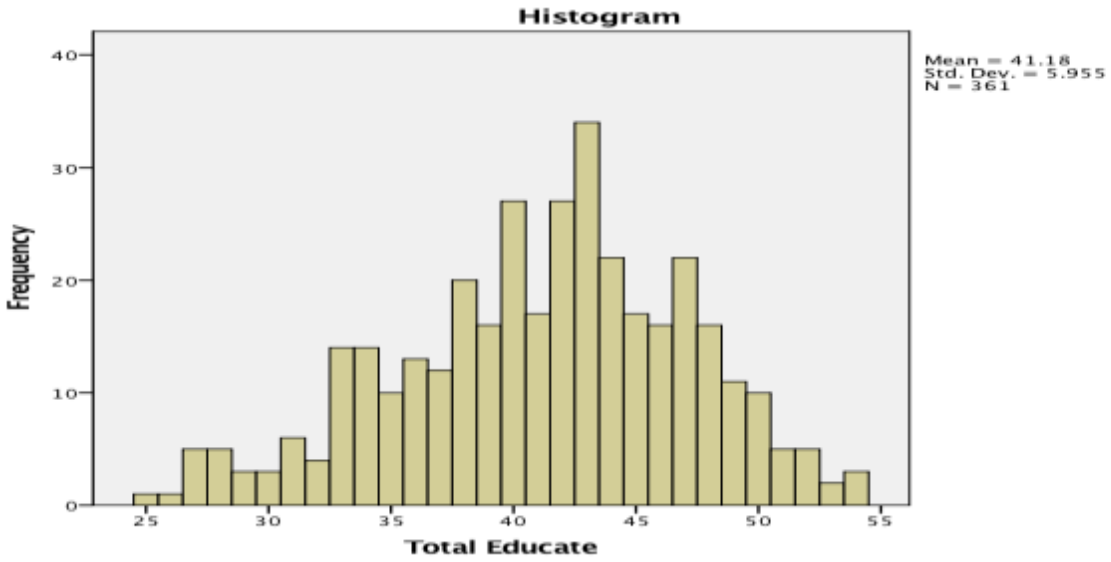

Figure 5. Normally distributed histogram for educate.

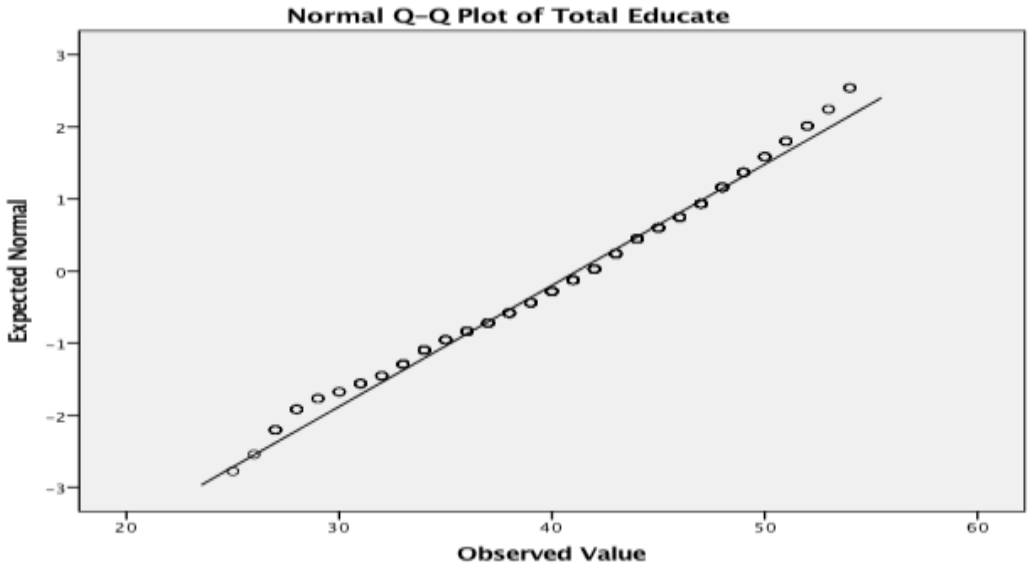

Figure 6. Normally distributed Q-Q plot for educate.

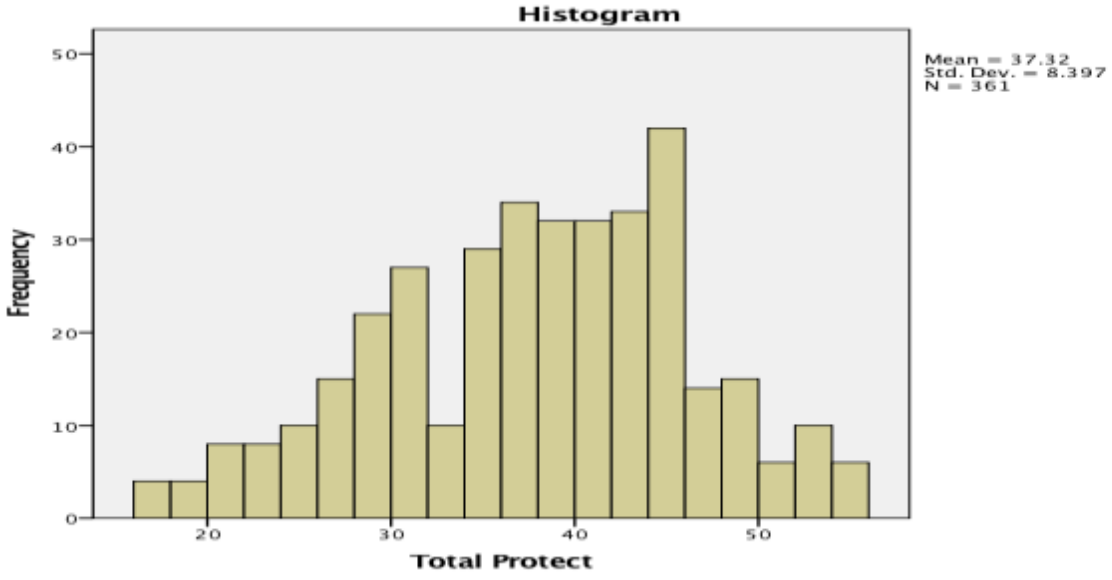

Figure 7. Normally distributed histogram for protect.

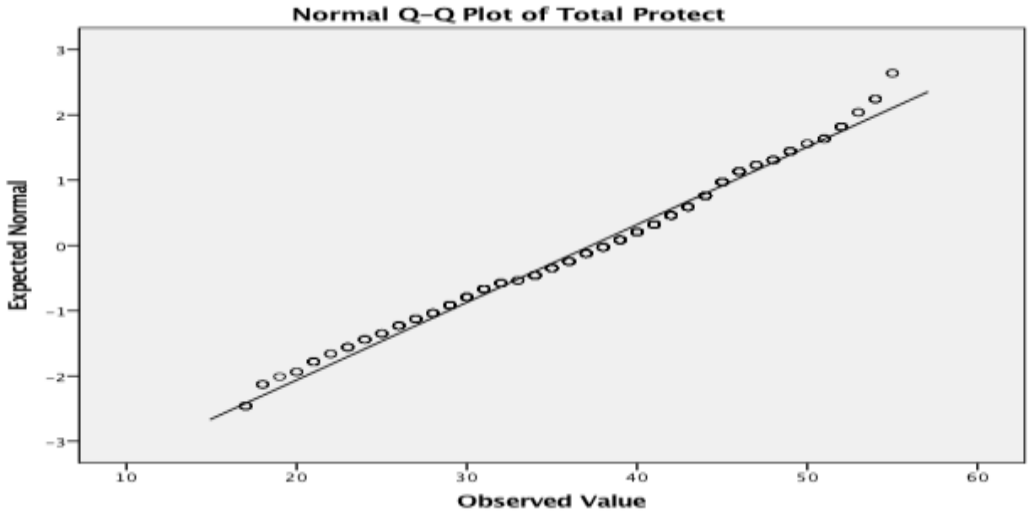

Figure 8. Normally distributed Q-Q plot for protect.

Lastly, the Shapiro-Wilk significance test ($p < 0.05$) showed that data were approximately not-normally distributed for variables. It was done with the view to comparing the sample distribution to a normal one (see Table 5) in order to establish whether the quantitative data exhibited a serious deviation from normality. The hypothesis Test of Normality for any given variable is:

H_0: Distribution is Normal H_a: Distribution is not Normal

Table 5

Normality of Data Based on the Average of Respect-Educate-Protect (REP) Variables

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	*df*	Sig.	Statistic	*df*	Sig.
Gender	.372	361	.000	.631	361	.000
Age	.168	361	.000	.931	361	.000
Level of Teaching	.293	361	.000	.750	361	.000
Years of Experience	.376	361	.000	.696	361	.000
Total Respect	.080	361	.000	.980	361	.000
Total Educate	.081	361	.000	.984	361	.001
Total Protect	.075	361	.000	.984	361	.000

In the table above, $p < 0.05$ and therefore, there was little support for the null hypothesis above that the data were normally distributed. Significance was achieved in the Shapiro-Wilk test of normality, leading to the conclusion that the data were not normally distributed. Consequently, the choice to use non-parametric tests to analyze quantitative data rose out of the realization that data for the study were not normally distributed.

Explanation of Cronbach's Alpha

The Cronbach's Alpha, according to Tavakol and Dennick (2011) was a commonly utilized index of test reliability of survey research instruments that was often used to assess the reliability of quantitative data collected from the field. Table 6 shows the results of the Cronbach Alpha test done on the 46 items used to collect data questionnaire (24 items for respect, 11 items for educate, and 11 items for protect) to determine their reliability.

Table 6

Results of the Cronbach's Alpha Test

Subscale		α	*N*
Digital Citizenship Awareness	Respect	.79	24
	Educate	.74	11
	Protect	.86	11
Total Digital Citizenship Awareness		.89	46

The Cronbach's Alpha value of 0.89 demonstrated in the table above shows that there was an error variance of 0.21 (random error) in the various scores (0.89 x 0.89 = 0.79; 1.00-0.77 = 0.21). The random error was within the acceptable margins and the value of Cronbach's Alpha (0.89) was also within the acceptable margins of between 0.70 and 0.95 (Tavakol & Dennick, 2011), meaning that the data items collected by the questionnaire instrument provide an independent reliability assessment of the instrument.

Demographic Characteristics

As mentioned, a total of 550 participants were sampled for participation into the study; however, only 361 participants returned their duly completed questionnaires,

representing 65.6% response rate. Of the 361 participants, 159 (44%) were male and 202 (56%) were female. A third of the sampled respondents (118; 33%) were in the 35-39 years age category, while 97 (27%) were in the 30-34 years age category. Also 68 (19%) were in the 40-44 years age category, 46 (13%) were in the 25-29 years age category; however, the mean age of the participants was 35.9252 years. Of the 361 participants, 163 (45.2%) were elementary school teachers, 119 (33%) were high school teachers, and 79 (21.9%) were middle school teachers. Lastly, in years of experience, it is important to note that 220 (60.9%) of the participants had taught for between 1 and 10 years, while 95 (26.3%) had taught for between 11 and 20 years. Only 46 (12.7%) of the respondents had a teaching experience spanning over 20 years.

Descriptive Statistics of Digital Citizenship Awareness

The research questions for the quantitative section of the study aimed at assessing the scope of digital citizenship awareness demonstrated by Saudi teachers based on Ribble's characterization of respect, educate and protect, and in accordance with a set of predetermined variables. Specifically, the first quantitative research question was as follows: "What are the descriptive statistical levels of digital citizenship awareness for Saudi Arabia teachers based on Ribble's categories of respect, educate, and protect?" To answer this research question, average descriptive means for the three characterizations of the Ribble's model (Total Respect Mean, Total Educate Mean, Total Protect Mean), the Total REP mean, and their standard deviations were calculated and presented in Table 7.

Table 7

Descriptive Statistics of Digital Citizenship Awareness

Subscale	*n*	Mean	*SD*
Total Respect (R)	361	4.1582	0.36228
Total Educate (E)	361	3.7457	0.54092
Total Protect (P)	361	3.3962	0.76340
Total REP	361	3.7663	0.43544

Based on the descriptive analyses of data in Table 7, the total mean for digital citizenship awareness (Respect, Protect and Educate) of Saudi teachers was 3.7663, which indicated average level on a Likert scale from 1-5 of digital citizenship awareness. However, the digital citizenship perceptions that scored the highest mean score were those concerning the respect characterization of Ribble's model (X = 4.1582, SD = 0.36228), meaning that many participants were increasingly aware of the practices that they could perform or undertake to respect oneself and others in online environments. This was followed by perceptions or practices concerning Ribble's characterization of educate (X = 3.7457, SD = 0.54092). The perceptions or practices demonstrated by participants concerning Ribble's categorization of protect came third, with a mean score of 3.3952 and a standard deviation of 0.76340. Overall, the descriptive statistics showed that the sampled participants demonstrated good levels of digital citizenship awareness in Ribble's category of respect and average levels of digital citizenship awareness in Ribble's categories of educate and protect.

Digital Citizenship Awareness and Gender

To answer the second research question (Is there a significant mean difference on digital citizenship awareness based on the gender of the teacher?) of the quantitative research question was interested in examining if there was a significant mean difference on digital citizenship awareness based on the gender of the teacher. Digital citizenship awareness was evaluated in terms of the Ribble's main categories of respect, educate, and protect (average scores for each of these dependent variables were used). A non-parametric test known as the Mann-Whitney U test was used to undertake the analyses based on the non-normality of data (data were heavily skewed) and the fact that the independent grouping variable (gender) contained two variables--male and female.

Descriptive statistics showed that male respondents (M = 181.42) scored higher in digital citizenship awareness based on Ribble's category of respect than female respondents (M = 180.67), though the mean difference seemed marginal. The results are presented in Table 8. The Mann-Whitney U-test shows that the observed no difference between both groups of gender is weakly significant ($p > 0.05$, U = 15993.0). Thus, the null hypothesis could not be rejected: both samples were from the same population, and no difference caused by random effects of chance was observed. The results are presented in Table 9.

Table 8

Gender and Digital Citizenship Awareness Ranks (Respect Variable)

Ranks	Gender of Respondent	*N*	Mean	Sum of Rank
Average Score of Respect Variable	Male	159	181.42	28845.00
	Female	202	180.67	36496.00
	Total	361		

Table 9

Gender and Digital Citizenship Awareness Test Statistics (Respect Variable)

Test Statistics[a]	Average Score of Respect Variable
Mann-Whitney U	15993.000
Wilcoxon W	36496.000
Z	-.067
Asymp. Sig. (2-tailed)	.946

[a] Grouping Variable: Gender of Respondent

Descriptive statistics showed that male respondents (M = 200.35) scored higher in digital citizenship awareness based on Ribble's category of educate than female respondents (M = 165.77), with the results demonstrating that the mean difference was quite substantial. The results are presented in Table 10. The Mann-Whitney U-test showed that the observed difference between both groups of gender is highly significant ($p < 0.05$, U = 12983.0). Thus, I can reject the null hypothesis that both samples are from the same population and that the observed difference is not only caused by random effects of chance. The results are presented in Table 11.

Table 10

Gender and Digital Citizenship Awareness Ranks (Educate Variable)

Ranks	Gender of Respondent	*N*	Mean	Sum of Rank
Average Score of Educate Variable	Male	159	200.35	31855.00
	Female	202	165.77	33486.00
	Total	361		

Table 11

Gender and Digital Citizenship Awareness Test Statistics (Educate Variable)

Test Statistics[a]	Average Score of Respect Variable
Mann-Whitney U	12983.000
Wilcoxon W	33486.000
Z	-3.130
Asymp. Sig. (2-tailed)	.002

[a] Grouping Variable: Gender of Respondent

Descriptive statistics showed that female respondents (M = 181.86) scored higher in digital citizenship awareness based on Ribble's category of protect than male respondents (M = 180.86), with the results demonstrating that the mean difference seemed marginal. The results are presented in Table 12. The Mann-Whitney U-test shows that the observed no difference between both groups of gender is weakly significant ($p >$ 0.05, U = 16037.5). Thus, I cannot reject the null hypothesis that both samples are from the same population and that the observed no difference is only caused by random effects of chance. The results are presented in Table 13.

Table 12

Gender and Digital Citizenship Awareness Ranks (Protect Variable)

Ranks	Gender of Respondent	*N*	Mean	Sum of Rank
Average Score of Protect Variable	Male	159	180.86	28757.50
	Female	202	181.11	36583.50
	Total	361		

Table 13

Gender and Digital Citizenship Awareness Test Statistics (Protect Variable)

Test Statistics[a]	Average Score of Respect Variable
Mann-Whitney U	16037.500
Wilcoxon W	28757.500
Z	-.022
Asymp. Sig. (2-tailed)	.983

[a] Grouping Variable: Gender of Respondent

Digital Citizenship Awareness and Grade Level of Teaching

To answer the third research question (Is there a significant mean difference on digital citizenship awareness based on the teachers' level of teaching (elementary, middle, and high school?) of the quantitative research question was interested in examining if there was a significant mean difference on digital citizenship awareness based on grade level of teaching. Again, digital citizenship awareness was evaluated in terms of the Ribble's main categories of respect, educate, and protect (average scores for each of these dependent variables were used). A non-parametric test known as the

Kruskal-Wallis test was used to undertake the analyses based on the non-normality of the quantitative data and the fact that the test had the capacity to allow for comparison of more than two independent groups, in this case the level of teaching (elementary, middle school, and high school).

The results demonstrated that there is not a statistically significant difference between the level of teaching categories and digital citizenship awareness based on Ribble's theme of respect ($x^2 = 3.723$, $df = 2$, $p = 0.155$), with a mean rank of 190.87 for high school teachers, 182.96 for elementary school teachers, and 162.09 for middle school teachers. These results showed that high school teachers are more knowledge than elementary and middle school teachers when it comes to demonstrating digital citizenship awareness based on Ribble's categorization of respect. The results are presented in Table 14. The Kruskal-Wallis H test significance level was 0.155 (i.e., $p = 0.155$), which was above 0.05, and, therefore, there was no statistically significant differences in the mean ranks of Respect between the three groups of the independent variable, Levels of Teaching. Thus, I could not reject the null hypothesis that the three groups means were from the same population and the observed differences were caused by random effects. The results are presented in Table 15.

Table 14

Level of Teaching and Digital Citizenship Awareness Ranks (Respect Variable)

Ranks	Level of Teaching	*N*	*M*
Average Score of Respect Variable	Elementary	163	182.96
	Middle School	79	162.09
	High School	119	190.87
	Total	361	

Table 15

Level of Teaching and Digital Citizenship Awareness Test Statistics (Respect Variable)

Test Statistics[a,b]	Average Score of Respect Variable
Chi-square	3.723
df	2
Asymp.Sig.	.155

[a] Kruskal Wallis Test

[b] Grouping Variable: Level of Teaching

These results showed that there was no a statistically significant difference between the level of teaching categories and digital citizenship awareness based on Ribble's theme of educate (x^2 = 1.088, *df* = 2, *p* = 0.581), with a mean rank of 186.07 for high school teachers, 182.07 for elementary school teachers, and 170.78 for middle school teachers. Again, these results showed that high school teachers were more knowledge than elementary and middle school teachers when it came to demonstrate digital citizenship awareness based on Ribble's categorization of educate. The results are presented in Table 16. The Kruskal Wallis H test significance level was 0.581 (i.e., *p* =

0.581), which was above 0.05, and, therefore, there was no statistically significant differences in the mean ranks of Educate between the three groups of the independent variable, Levels of Teaching. Thus, we cannot reject the null hypothesis that the three groups means are from the same population, and the observed differences are caused by random effects. The results are presented in Table 17.

Table 16

Level of Teaching and Digital Citizenship Awareness Ranks (Educate Variable)

Ranks	Level of Teaching	*N*	*M*
Average Score of Educate Variable	Elementary	163	182.07
	Middle School	79	170.78
	High School	119	186.32
	Total	361	

Table 17

Level of Teaching and Digital Citizenship Awareness Test Statistics (Educate Variable)

Test Statistics[a,b]	Average Score of Respect Variable
Chi-square	1.088
df	2
Asymp.Sig.	.581

[a] Kruskal Wallis Test

[b] Grouping Variable: Level of Teaching

These results showed that there was no a statistically significant difference between the level of teaching categories and digital citizenship awareness based on Ribble's theme of protect ($x^2 = 0.914$, $df = 2$, $p = 0.633$), with a mean rank of 185.33 for

high school teachers, 182.51 for elementary school teachers, and 171.36 for middle school teachers. These results showed that high school teachers were more knowledge than elementary and middle school teachers when it came to demonstrate digital citizenship awareness based on Ribble's categorization of protect. The results are presented in Table 18. The Kruskal Wallis H test significance level was 0. 0.633 (i.e., p=0. 0.633), which was above 0.05, and, therefore, there was no statistically significant differences in the mean ranks of Protect between the three groups of the independent variable, Levels of Teaching. Thus, I cannot reject the null hypothesis that the three groups means are from the same population, and the observed differences are caused by random effects. The results are presented in Table 19.

Table 18

Level of Teaching and Digital Citizenship Awareness Ranks (Protect Variable)

Ranks	Level of Teaching	*N*	*M*
Average Score of Protect Variable	Elementary	163	182.51
	Middle School	79	171.36
	High School	119	185.33
	Total	361	

Table 19

Level of Teaching and Digital Citizenship Awareness Test Statistics (Protect Variable)

Test Statistics[a,b]	Average Score of Respect Variable
Chi-square	.914
df	2
Asymp.Sig.	.633

[a] Kruskal Wallis Test

[b] Grouping Variable: Level of Teaching

Digital Citizenship Awareness and Years of Experience

To answer the fourth research question (Is there a significant mean difference on digital citizenship awareness based on the teachers' years of experience?) of the quantitative research question was a significant mean difference on digital citizenship awareness based on years of experience. It was important to note that digital citizenship awareness was assessed based on Ribble's categories of respect, educate, and protect (average scores for each of these dependent variables were used). Again, Kruskal-Wallis' test was used to undertake the analyses based on the heavily skewed quantitative data and the fact that the test had the capacity to allow for comparison of more than two independent groups, in this case years of experience (1-10 years, 11-20 years, and more than 20 years).

These results demonstrated that there was no a statistically significant difference between the years of experience categories and digital citizenship awareness based on Ribble's theme of respect ($x^2 = 2.259$, $df = 2$, $p = 0.323$), with a mean rank of 200.32 for teachers with over twenty years of teaching experience, 184.17 for teachers with a

teaching experience of between 11 and 20 years, and 175.59 for teachers with a teaching experience of between 1 and 10 years. These results showed that the teachers who had been teaching for a long time also demonstrated high digital citizenship awareness based on Ribble's category of respect. The results are presented in Table 20. The Kruskal Wallis H test significance level was 0.323 (i.e., $p = 0.323$), which was above 0.05, and, therefore, there was no statistically significant differences in the mean of Respect between the three groups of the independent variable, Years of Teaching. Thus, I cannot reject the null hypothesis that the three groups means are from the same population, and the observed differences are caused by random effects. The results are presented in Table 21.

Table 20

Years of Teaching and Digital Citizenship Awareness Ranks (Respect Variable)

Ranks	Years of Experience	*N*	*M*
Average Score of Respect Variable	1-10 years	220	175.59
	11-20 years	95	184.17
	20 or more years	46	200.32
	Total	361	

Table 21

Years of Teaching and Digital Citizenship Awareness Test Statistics (Respect Variable)

Test Statistics[a,b]	Average Score of Respect Variable
Chi-square	2.259
df	2
Asymp.Sig.	.323

[a] Kruskal Wallis Test

[b] Grouping Variable: Level of Teaching

These results showed that there was no a statistically significant difference between the years of experience categories and digital citizenship awareness based on Ribble's theme of educate ($x^2 = 2.481$, $df = 2$, $p = 0.289$), with a mean rank of 186.82 for teachers with a teaching experience of between 1-10 years, 177.11 for teachers with a teaching experience of between 11 and 20 years, and 161.20 for teachers with a teaching experience of more than 20 years. These results showed that the teachers with low levels of teaching experience were more knowledgeable on digital citizenship awareness based on Ribble's category of educate than teachers with high levels of teaching experience. The results are presented in Table 22. The Kruskal Wallis H test significance level was 0.289 (i.e., $p = 0.289$), which was above 0.05, and, therefore, there was no statistically significant differences in the mean of Educate between the three groups of the independent variable, Years of Teaching. Thus, I cannot reject the null hypothesis that the three groups means are from the same population, and the observed differences were caused by random effects. The results are presented in Table 23.

Table 22

Years of Teaching and Digital Citizenship Awareness Ranks (Educate Variable)

Ranks	Years of Experience	*N*	*M*
Average Score of Educate Variable	1-10 years	220	186.82
	11-20 years	95	177.11
	20 or more years	46	161.20
	Total	361	

Table 23

Years of Teaching and Digital Citizenship Awareness Test Statistics (Educate Variable)

Test Statistics[a,b]	Average Score of Respect Variable
Chi-square	2.481
df	2
Asymp.Sig.	.289

[a] Kruskal Wallis Test

[b] Grouping Variable: Level of Teaching

The results reported in the table above showed that there was a statistically significant difference between the years of experience categories and digital citizenship awareness based on Ribble's theme of protect ($x^2 = 9.983$, $df = 2$, $p = 0.007$), with a mean rank of 213.72 for teachers with over 20 years of teaching experience, 195.79 for teachers with a teaching experience of between 11 and 20 years, and 167.77 for teachers with a teaching experience of between 1 and 10 years. These results showed that the teachers with more than 20 years of experience were more knowledgeable on digital citizenship awareness based on Ribble's category of protect than teachers with low levels of teaching

experience. The results are presented in Table 24. The Kruskal Wallis H test significance level was 0.007 (i.e., $p = 0.007$), which was below 0.05, and, therefore, there was statistically significant differences in the mean of Protect between the three groups of the independent variable, Years of Teaching. Thus, I rejected the null hypothesis that the three groups means are from the same population, and the observed differences are not only caused by random effects. The results are presented in Table 25.

Table 24

Years of Teaching and Digital Citizenship Awareness Ranks (Protect Variable)

Ranks	Years of Experience	*N*	*M*
Average Score of Protect Variable	1-10 years	220	167.77
	11-20 years	95	195.79
	20 or more years	46	213.72
	Total	361	

Table 25

Years of Teaching and Digital Citizenship Awareness Test Statistics (Protect Variable)

Test Statistics[a,b]	Average Score of Respect Variable
Chi-square	9.983
df	2
Asymp.Sig.	.007

[a] Kruskal Wallis Test

[b] Grouping Variable: Level of Teaching

Summary

In general, the findings of the study could serve as the reflection of teachers' perceptions on digital citizenship and the role of each category in the identification of the tasks and expectations. It included the perceptions of teachers regarding the importance of digital citizenship in educating students and the development of such teaching skills with the help of which it was possible to educate, protect, and respect. Digital citizenship was proved as a crucial concept in teaching and education. The opinions and thoughts of different teachers who worked in Saudi Arabia schools helped to understand that such factors as gender, grade level, and the years of teaching could determine the effects and outcomes of an educational process. Though the qualitative and quantitative data collected in the study were a small sample representation of Saudi Arabia teachers, they could be used to formulate new approaches to and perceptions of digital citizenship. The results show that some teachers' perceptions are important in terms of respect, education, and protection. Finally, the chosen statistical methods and techniques helped to transcribe the data and combine qualitative and quantitative information in order to formulate clear conclusions. The next chapter summarizes the findings and provides conclusions and recommendations in the chosen field.

CHAPTER V

CONCLUSION AND RECOMMENDATIONS

Introduction

The overall purpose of this research was to explore the extent to which Saudi Arabia teachers comprehend and perceive the concept of digital citizenship and discuss the impact of such general characteristics as respect, educate, and protect and demographic characteristics as gender, grade level of education, and years of experience on these perceptions. To accomplish the goal, a mixed method was used that integrated qualitative and quantitative data. Besides, the concurrent triangulation research design was developed to investigate the Saudi Arabia teachers' perceptions of their knowledge of digital citizenship. To provide the possibility of the chosen methods, it was important to cooperate with many teachers and gather their opinions and knowledge meeting all ethical and organizational requirements. The peculiar feature of the discussion part is a chance to cooperate with male teachers with different years of experience and use their knowledge to create new judgments and recommendations.

In this chapter, the conclusions and generalization of the obtained information will be introduced in order to answer the main research questions, which are "What are the perceptions of digital citizenship awareness among Saudi Arabia teachers based on Ribble's categorization of respect, educate, and protect?" and "What scope of digital

citizenship awareness does Saudi Arabia teachers demonstrate based on Ribble's principles of respect, educate, and protect in relation to gender, grade level of teaching, and teachers' years of experience?." There are two main sections that are devoted to the discussion of qualitative and quantitative data results. There are also the sections where the limitations, suggestions for further research, and conclusions are developed. Each section has its purpose to inform the reader about the achievements made and the answered developed.

Discussion of Qualitative Data Results

Qualitative data were obtained from four semi-structured interviews with male teachers. With the help of interviews, the perceptions of digital citizenship awareness were identified and explained in terms of Ribble's categorization. The concept of digital citizenship has attracted the attention of many researchers because of the necessity to give a clear definition and prove that its technological, social, and ethical aspects were considered by teachers and properly explained to students. Many Saudis are concerned about the necessity to follow the rules and new standards and protect their customs and traditions at the same time (Meijer, 2016). The qualitative data gathered helped to understand the main concerns of Saudi Arabia teachers and their perceptions of digital awareness in particular.

The interviews were organized in a proper way, and the participants shared their thoughts about the quality of education and the worth of digital citizenship in education and their beliefs about the importance to control students' decisions and ways to use the Internet and other digital sources in order to study, develop their skills, and improve their level of knowledge without breaking any ethical or legal rules and standards.

Communication between teachers and students are crucial in terms of digital citizenship (Fromm, 2014).

Interview Data

Through the analysis of this type of data, three major themes were introduced for discussion: (a) respect with its main categories of etiquette, access, and law; (b) educate with its categories of communication, literacy, and commerce; and (c) protect with such categories as rights/responsibilities, safety/security, and health/wellbeing (Ribble, 2015). In addition to the results obtained during the interview process, it is necessary to pay attention to the possible influence of the Theory of Planned Behavior and explain how human actions may be guided by behavioral, normative, and control beliefs. The beliefs identified in terms of the TPB seem to be similar with the characteristics of Ribble and help to clarify that respect is a behavioral concept, educate is a normative aspect, and protect is a control aspect of beliefs that teachers and students are free to develop in the academic institutions they are involved in.

Theme A: Respect. The principle of respect is integral in the perceptions of digital awareness among Saudi Arabia teachers. There are also three main standards that cannot be neglected when teachers have to demonstrate what they know about digital citizenship, what they want or have to know, and what kind of information they may share with students in educative goals. Digital technologies have already demonstrated their high revolutionized opportunities, and students proved that they could respect themselves and other people in the virtual world (Alqahtani, Alqahtani, & Alqurashi, 2017). The current investigations show that teachers understand how important for digital citizenship the concepts of etiquette, access, and law are. In the modern world, teachers

have to be ready to minimize any possible negative effects on different users, teach students how to use available technologies in the most appropriate manner, and underline the role of religion and culture.

Besides, there is a need to think about different methods of accessing information and the types of accommodations, which help to combine social needs and technological aspects. Finally, teachers share their perceptions of law importance in the respect principle. It is not enough to respect social and technological norms in order to be a significant part of digital citizenship. It is necessary to rely on the law so that the identification of users can be easy, and unknown sites cannot be a threat anymore.

These findings confirm the theory offered in this research as well. In the TPB framework, much attention is paid to the behavioral patterns and beliefs that each step that was taken or each decision that was made has its consequences and impact on peoples. The theory states that the outcomes may be positive and negative, and it is hard to predict the results (Yang, 2013). Interviews with teachers help to develop a new explanation to digital citizenship in regards to the respect principle. Digital citizenship may be defined as one of the best ways to benefit with the technological progress in all aspects of life. There are many chances to be challenged by suspicious sites or ethics and morals being broken. However, the presence of behavioral beliefs is what makes people strong and ready for different tasks. Teachers comprehend how crucial their understanding of digital citizenship because they have many responsibilities, including the etiquette principles.

Access and legal perspectives are also important in digital citizenship, and Saudi Arabia teachers have enough chances to promote it successfully. In many schools and

organizations of Saudi Arabia, social media, as the main factor in the development of digital citizenship, is still banned (Collier, 2014). Students have to read books as the main source of knowledge, and teachers should find the most effective ways of learning that could be offered to their students.

At the same time, many teachers find it appropriate to stay categorical in their judgments because they believe that respect to religion cannot be neglected, and the teachings of Islam save Saudi Arabia people against the threats and challenges of modern digital revolution. Islamic religion may be one of the major principles for people to be followed. However, students, as well as their teachers, should have right to choose. The consideration of rules and principles is important, and the findings show Saudi Arabia teachers possess an impressive amount of knowledge of digital citizenship and know how to share it with their students.

Theme B: Educate. The principle to educate is another theme that has been discussed in research and analyzed through the answers given four interviewees. According to Ribble (2015), teachers should be ready to educate themselves about newly available technologies and share their knowledge with their students. In addition to education, this principle presupposes the idea of connecting with others in order to achieve positive results and help people with a lower level of knowledge to learn something new (Al-Zahrani, 2015). Teachers' perceptions of digital citizenship show that to educate is one of the main goals that have to be achieved by teachers in their relations with students.

There are three types of education that have to be promoted among the teachers of Saudi Arabia categorized under communication, literacy, and commerce units. Today,

regional activities in Saudi Arabia are frequently observed among male and female populations (Sreberny, 2015). However, teachers believe that, to become successful citizens of digital society, they have to know how to develop their communication in a safe manner and demonstrate appropriate communicative skills. There are also certain basics that cannot be ignored because they help evaluate the available sources and develop different online modes.

These findings may be supported by the theoretical framework of the study in regards to the normative expectations that are usually determined by social pressure and subjectivity. Communication with teachers shows that technologies have a tendency to break the rules and lead to new, unpredictable outcomes. For example, some teachers are involved in online talks with students. The results of such online communication may result in the situations when some of the parties completely forget the principles of subordination and neglect the importance of education. Communication by means of technologies that occurs in digital citizenship should have its own norms and rules, and role-modeling practices are appropriate in this case. Teachers are the models for many students, and this role should not be misunderstood.

Regarding the theoretical ground of the study, subjective norms are the perceptions of the behaviors one group of people should demonstrate to another group of people (Yang, 2013). Literacy is the category with the help of which teachers may improve students' understanding of digital citizenship. The interviews showed that despite the field of the study or the years of education, teachers never stop teaching their students how to make correct decisions or how to use theories in order to succeed in practice.

Finally, certain attention should be paid to the category of commerce when teachers should establish the boundaries that define what is wrong and what is right in students' activities. For example, buying and selling something online are frequent activities in Saudi Arabia. Teachers are aware of the outcomes of such activities and try to protect their students against the mistakes. Therefore, special sites are usually defined as safe by teachers (Amazon or Alibaba) and able to save students' time and efforts. Though commerce is not the core of education, this factor has to be identified because it helps to improve teachers-students cooperation in the digital world.

Theme C: Protect. Digital citizenship is the concept that has to be protected. Therefore, the principle of protect developed by Ribble (2015) was appropriate from several perspectives. The analysis of qualitative data showed that teachers found the idea of protection of students, their rights, and health, as well as the promotion of safety and security regarding online sources and vulnerable computer systems, crucial in their work. Though digital citizenship is a powerful concept, it requires additional support. For example, teachers will never neglect the necessity to follow the already established rules and standards. However, it is not enough to follow certain rules and protect the rights of students or other users of digital technologies. During the interviews, teachers helped to create a strong interpretation of digital citizenship as a set of rules that are usually under the umbrella of such aspects as religion, culture, and education. Such requirement makes people use technologies in an easy and appropriate way.

The idea of protecting users and enhancement of security is also supported by the anti-cyber crime law (CITC, 2014). Another important confirmation of this perception of digital citizenship should be taken from the chosen theoretical framework of control

beliefs (Yang, 2013). The findings taken from the interviews are useful for further development of standards and rules according to which Saudi Arabia teachers can improve their educational processes, communication with students, and the development of specific perceptions. The analysis shows that Saudi Arabia teachers are able to develop the perceptions of digital citizenship and explain the importance of protection of personal rights and responsibilities and the possibility to combine it with other principles of respect and education.

Another important aspect of the discussion is connected with ethics and the development of ethical rules and norms. In digital citizenship, people should know how to use the information they have and how to offer the information they can find. In other words, it is necessary to learn how to use the available material in an ethical way without a threat of living in a digital world (Fromm, 2014). The digital world is complex, and people should be protected ethically regarding their civil rights, attempts to be free from illegal search, and the possibility to avoid security threats (Andrejevic, 2017).

The discussions of perceptions of digital citizenship also cover the role of parents and other community's representatives. The task is not to make a school responsible for all those challenges and concerns of the digital era, but to provide parents or other family members with an opportunity to influence students' knowledge and develop the required portion of skills. The peculiar feature of parents is to find out the methods and approaches with the help of which they can persuade students not to use or, vice versa, use the technologies and follow the rules prescribed.

The same ideas were developed by the supporters of TPB, who believed that behavioral matters might determine the way of how students learn new material or share

their needs and knowledge. Digital threats include viruses, spy programs, and suspicious programs that may distract people and make them spend time on unpredictable steps and decisions. Teachers have to be aware of such challenges and know how to inform students and share their experiences and approaches.

Finally, the interviews help to discover the last concern of digital citizenship threats that gain the form of dependence on the technologies. The task of Saudi Arabia teachers is to protect their students against the negative effects of technological addiction. Though today it is hard to image the life of a person without the Internet, teachers try to provide their students with facts and explanations of why technologies should be carefully treated. The growth of the Internet in Saudi Arabia was observed in 1999 for the first time (Mellor & Rinnawi, 2016). The citizens of the country did not want to pay much attention to these possibilities a certain period of time. However, after a number of possibilities were discovered, it was hard to control Saudi Arabia people's choices. The only thing that had to be done was the creation of effective protection and support.

The last aspect in the analysis of qualitative information has to be discussed. The impact of religion and culture on the way of how to communicate with people, how to interpret their answers, and how to respect the opinions of each participant, cannot be neglected. The data gathered from ordinary people helped to realize that education was the field that was still challenged by certain cultural and religious concerns. The inability to cooperate with female teachers directly had to be defined as one of the main challenges for researchers. However, the impact of these issues could have more serious scopes. For example, the interviews showed that the attention to such concepts as religion and culture deprived teachers of the opportunities to be devoted to a teaching process to its full

extent. They had to think about how not to break the rules and certain social norms. At the same time, teachers had to enlarge students' knowledge and offer them the information that could be used in their future lives. The latest innovations and changes in the digital world could lead to a number of changes in everyday life and determine the relations between people. Teachers shared their attitudes about such innovations during the interviews, and it was evident that religion and culture could be observed in every movement in their live and the life of students they want to teach. The role of religion cannot be ignored because it predetermines the style and the decisions people make. All four participants tried to underline the role of religion and the necessity to understand all cultural aspects that had to be used in education, as well as in the development of their knowledge. As soon as students learn something new, they have to comprehend that certain religious and cultural norms cannot be broken, and teachers' task is to help students combine the ideas of digital citizenship and innovation on the one hand and religious interests and cultural loyalty on the other head.

In general, the analysis of the qualitative data obtained from the interviews helps to realize that Saudi Arabia teachers know a lot about digital citizenship, its threats and opportunities to students, and the steps that can be taken to respect, educate, and protect all users.

Discussion of Quantitative Data
Results

The discussion of quantitative data and the results obtain should help to answer the second research question and all its sub-questions regarding the possible impact of a gender factor, the grade of the level of teaching, and the years of experiences and the descriptive statistics of Saudi Arabia teachers' awareness of digital citizenship. The

answer to the second research question implies the answer to four definite sub-questions and proves that teachers' awareness of digital citizenship may depend on certain factors and have nothing in common with other factors. The part of the mixed research method was the creation of an online survey where 550 male and female Saudi Arabia teachers were invited. The results were formulated on the basis of the answers of 361 participants of different age, with different years of experiences, and with different grade level of teaching (56% were female teachers, and 44% were male teachers).

a. What are the descriptive statistical levels of digital citizenship awareness for Saudi Arabia teachers based on Ribble's categories of respect, educate, and protect?

The findings show that teachers find it important to be involved in the activities the goal of which is to respect the rules, opportunities, and knowledge. Teachers consider the role of education and protection. However, the role of respect cannot be ignored because as soon as a teacher know how to respect digital citizenship and use the opportunities offered, the success of the digital era can turn into the success of Saudi Arabia people. Respect should touch upon teachers, students, and even the programs that are offered to people in a digital world (Howard, 2015).

b. Is there a significant mean difference on digital citizenship awareness based on the gender of the teacher?

The results of the survey demonstrate that male teachers focus on the importance of education and respect knowledge about digital citizenship more than women do, and female teachers are interested in the idea of protection of digital knowledge more than men are. Such findings are supported by the already proved statement of Sreberny (2015) about women's activism in the digital world and the possibilities to change the Middle

East. Protection is the key to a successful work of female teachers, and male teachers should be responsible for education and respect rights and freedoms in digital citizenship.

c. Is there a significant mean difference on digital citizenship awareness based on the teachers' level of teaching (elementary, middle, and high school)?

The level of teaching is a complicated variable that shows how different teachers' perceptions and intentions can be. For example, high school teachers are more interested in educating students, promoting their understanding of digital citizenship, and protecting their rights and personalities in the digital world. The principle of respect also plays an important role in high schools. Such results prove that the goal of high school teachers is to instill the feeling of respect and recognition of the rules and standards of the digital world and improve students' knowledge.

Digital citizenship is proved as an integral part of the modern world. Still, elementary and middle school students are too young to comprehend all peculiarities of this type of citizenship. Saudi Arabia teachers find it normal and effective to study high school students and explain to them the threats and benefits of technologies in education, society, and business. There is a chance to achieve positive results in discussing digital citizenship with high school teachers and students. Besides, elementary school students are not always ready to accept the Internet and other technologies in the required way. It is expected to involve their parents and communities in such discussions in order to influence activities and thoughts about the digital world.

d. Is there a significant mean difference on digital citizenship awareness based on the teachers' years of experience?

In this study, a certain attention is paid to the teachers' years of experience as well. In Saudi Arabia, there are many teachers, who are involved in the field of education

during the last 20 years. As a rule, such teachers are characterized by a high respect for religion, cultural roots, and behavioral norms. Young teachers want to educate students and share their recent experiences in order to prove how technologies can be used for educational and personal goals. Young teachers are considered as a digital generation. According to (Stone, 2010), the technology generation gap is shrinking and digital generation measured every 10 years due to an acceleration of technology change.

Digital citizenship awareness is important for the teachers who have more than 20 years of experience in terms of respect and protection. Experienced teachers understand that they have to study their students and explain how to stay protected and how to respect the rules and norms of technological education (Alqahtani et al., 2017). Young teachers want to educate students and improve their awareness of digital citizenship.

In general, the mixed research method was the opportunity to deepen qualitative data with the help of quantitative facts (Creswell, 2003). The statistics remain to be the best evidence of the information gathered from the interviews. The mixed method has a number of powerful aspects and helps the researcher to underline the main ideas and give a clear answer to the formulated research questions. Saudi Arabia rules and standards for citizens are always tricky but definite (Meijer, 2016). The mixed method is the possibility to overcome the tricky part and clarify the factors that can influence the quality of education and the quality of life in the future (Creswell, 2003).

The qualitative and quantitative data of this research were used to explain to students the essence of digital citizenship and identify the factors that may impact it. The findings of the survey and interviews indicate that teachers' perceptions of digital citizenship may depend on many factors, including the years of experience, gender, and

the school level. Still, the principles of educate, respect, and protect remain to be integral in the development of teachers' perceptions and students' understanding of digital citizenship.

Limitation of the Study

In the study, there are several limitations that have to be discussed. At the initial stages of research, it was concluded that the mixed-research method that included the collection of qualitative and quantitative data were characterized by several limitations: a small sample that had to be used for a deep inquiry, time constraints, and certain financial concerns. These limitations could influence the process of gathering data and other details that could support a research process. A small sample size is a frequent methodological limitation that included a certain number of units that were used in the study. Four teachers were interviewed. It was also impossible to interview female teachers because of the existing religious and cultural barriers in Saudi Arabia. The interview was conducted by a male researcher. It was inappropriate in cultural and religion of Saudi Arabia that women talks to men and discuss a particular business with an unknown person, thus, even when the researcher made a decision to interview people via Skype. The invitations to participate in research were sent via social media services, and no positive answers from women were received. The decision that religious or cultural concerns were the main reasons for such failure was made, and it is necessary to overcome this obstacle in future research. The answers of 361 teachers were appropriate for the survey. This information was enough to develop an analysis and make the conclusions. However, the appropriateness of the achieved results may be put under a question, and possible improvements should be suggested.

Another important limitation was connected with time. Digital citizenship is a constantly changing concept. With time, new attitudes and perceptions can be developed. Therefore, it is necessary to understand the same questions may be answered in another way in a short period of time. A properly developed research plan helped to identify the time frames and avoid complications and additional explanations in the study.

Finally, the absence of appropriate funding may be defined as a limitation of the study. However, regarding the results achieved and the work done, it is possible to say that funding was not as crucial as other limitations. In addition to the main challenges, it is necessary to mention such details as fluency in a language when it was necessary to translate the interviews on the Arab language into English and access to people, who had to participate in the study (the answers of 361 people out of 500 participants were appropriate).

Suggestions for Further Research

This study can be improved in a variety of ways. There are several suggestions that can be implemented for further research. First, research in the field of digital citizenship in terms of which Saudi Arabia teachers' perceptions and understandings in contemporary educational settings may be developed within certain time frames. The peculiar features of the digital citizenship concept include the necessity to follow recent technological achievements and the possible changes in the teaching staff. Taking into consideration such conditions, it is suggested to repeat this research in the next 2, 5, and 7 years in order to identify the shifts and compare the opinions.

Besides, future research should have an extended sample size and include teachers from different countries. Such solution may help to identify new perceptions and

compare the level of education in Saudi Arabia and other chosen countries, for example, the USA, the UK, and Australia. Besides, it is expected to hire a female researcher in a future team to have a chance to cooperate and communicate with female teachers and avoid a gender barrier because of cultural and religious norms. The participation of female teachers in research should help to cover the gender gap and discover if there are some differences in their perceptions in terms of this aspect.

A different sample, including students or parents, is another improvement that can help to cover different aspects of the knowledge of digital citizenship. It is possible to cooperate not with teachers only but also involve students or even their parents to gather enough information for the analysis. Students may tell about their cooperation and communication with teachers and reflect on teachers' perceptions of digital citizenship, and parents may discuss the outcomes of their children's work with different teachers. The change of research design may also lead to the change of variables. Instead of teachers' perceptions and the categories, lesson plans or teaching methods may be used as the independent variables.

Different results and possible improvements may also be observed in case the research design is changed. For example, it is possible to gather qualitative information with the help of observations. The choice of such method can be explained by the possibility to get and use certain in-depth details observed in students' lives. An observation can promote the exploration of students' real behavior and the level of knowledge about the use of technology in their everyday activities. Teachers, as well as researchers, can find out what students know or want to know about digital citizenship. A questionnaire remains to be the best the best method to gather quantitative data. Students,

parents, and teachers may participate in a new questionnaire to get the required portion of new quantitative data.

A further advance of the conceptual understanding is also appropriate. In addition to the already offered Theory of Planned Behavior, it is possible to focus on Vygotsky's theory of constructivism in human behavior or Maslow's theory of needs in order to clarify what conditions should be offered to teachers and why it is necessary to consider their needs in the field of education.

In general, there could be three main directions of how a further study on the same topic may be developed: (a) the changes in a sample size could possibly involve more teachers from different schools in Saudi Arabia, (b) the identification of time constraints and the necessity to repeat research after new improvements and technological changes could be observed, and (c) the nationalization of research in order to use the perceptions of teachers from different parts of the world. All these approaches would require additional time and efforts. A good research plan could be developed to identify the main stages and the goals of the work. It would also be better to involve several people to a research team in order to divide the work according to appropriate portions.

Conclusion

Comprehension and knowledge of digital citizenship among Saudi Arabia teachers have been investigated in the study in terms of three principles developed by Ribble (respect, educate, and protect) and three demographic variables (gender, school level, and experience). Each demographic characteristic has its own impact of teachers' perceptions of digital citizenship and predetermines the style of the relations that may be

developed between Saudi Arabia teachers and students. The study shows that digital citizenship in Saudi Arabia is closely connected to such aspects as culture, religion, and education. The mixed research method was used to gather qualitative information from the interviews and quantitative information from an online survey.

The investigation proved Saudi Arabia teachers' awareness of digital citizenship and helped to clarify that high school male teachers aim to provide their students with knowledge on how to respect, educate, and protect recent technological contributions, social norms, and human rights. Modern online communication and technological opportunities may confuse and impress people at the same time. Teachers' perceptions have to be properly developed regardless teachers' gender, experience, and grade level in order to educate, protect, and respect teachers and their opportunities in the modern digital world.

In general, further contributions to the same study are possible in case the researcher focuses on a new sample size and pay attention to the recent technological changes that may influence students-teachers relations, an educational process, and potential business decisions. Students have to learn how it is to be a good digital citizen, and teachers' perceptions should be properly developed to enhance the level of Internet attitudes, literacy, and protection.

REFERENCES

Alqahtani, A., Alqahtani, F., & Alqurashi, M. (2017). The extent of comprehension and knowledge with respect to digital citizenship among Middle Eastern and US students at UNC. *Journal of Education and Practice, 8*(9), 96-102.

Andrejevic, M. (2017). To preempt a thief. International *Journal of Communication, 11*, 879-896.

Al-Zahrani, A. (2015). Toward digital citizenship: Examining factors affecting participation and involvement in the Internet society among higher education students. *International Education Studies, 8*, 203-217. Retrieved from http://files.eric.ed.gov/fulltext/EJ1083923.pdf

Anney, U. N. (2014). Ensuring the quality of the findings of qualitative research: Looking at trustworthiness criteria. *Journal of Emerging Trends in Educational Research and Policy Studies, 5*, 272-281. Retrieved from http://jeteraps.scholarlinkresearch.com/articles/Ensuring%20the%20Quality%20of%20the%20Findings%20of%20Qualitative%20Research%20NEW.pdf.

Bazeley, P. (2004). Issues in mixing qualitative and quantitative approaches to research. In L. Buber, R. Gadner, & J. Richards (Eds.), *Applying qualitative methods to marketing management research* (pp. 141-156). London, United Kingdom: Palgrave Macmillan.

Berardi, R. P. (2015). *Digital citizenship: Elementary educator perceptions and formation of instructional value and efficacy* (Doctoral thesis, Immaculata University, PA). Retrieved from http://library.immaculata.edu/Dissertation/digitalB/Doc594BerardiR2015.pdf

Black, K. (2011). *Business statistics: For contemporary decision making*. Hoboken, NJ: John Wiley & Sons.

Communications and Information Technology Commission (CITC). (2014). *Anti-cyber crime law*. Retrieved from http://www.citc.gov.sa/en/Rulesand Systems/CITC System/Pages/CybercrimesAct.aspx.

Collier, A. (2014). Social media in Saudi schools…sort of. *NetFamilyNews*. Retrieved from http://www.netfamilynews.org/learning-social-media-saudi-arabia-us

Creswell, J. W. (2003). *Research design: Qualitative, quantitative, and mixed methods approaches* (3rd ed.). Thousand Oaks, CA: Sage Publications.

Creswell, J. W., & Plano Clark, V. L. (2007). Designing and conducting mixed methods research. Thousand Oaks, CA: Sage Publications.

Dotterer, G., Hedges, A., & Parker, H. (2016). Fostering digital citizenship in the classroom. *Education Digest, 82*, 58-63. Retrieved from http://web.b.ebscohost.com/ehost/pdfviewer/pdfviewer?vid=4&sid=8941b1f4-fbbf-429f-a4ab-e1295b2af405%40sessionmgr105&hid=116

Fromm, M. (2014). *Ethics and digital citizenship*. New York, NY: The Rosen Publishing Group.

Grant, C., & Osanloo, A. (2014). Understanding, selecting, and integrating a theoretical framework in dissertation research: Creating the blueprint for your "house." *Administrative Issues Journal: Education, Practice, and Research, 4*(2), 12-26.

Guest, G., MacQueen, K. M., & Namey, E. E. (2011). *Applied thematic analysis*. Thousand Oaks, CA: SAGE.

Guo, Z., & Stevens, K. J. (2011). Factors influencing perceived usefulness of wikis for group collaborative learning by first year students. *Australian Journal of Educational Technology*, *27*, 221-242. Retrieved from https://ajet.org.au/index.php/AJET/article/viewFile/967/241

Harwell, M. R. (2012). *Research design in qualitative/quantitative/mixed methods*. Retrieved from http://www.sagepub.com/sites/default/files/upm-binaries/41165_10.pdf

Hollandsworth, R., Dowdy, L., & Donovan, J. (2011). Digital citizenship in K-12: It takes a village. *Tech Trends, 55*, 37-47. doi:10.1007/s11528-011-0510-2

Howard, P. (2015). Digital citizenship in the afterschool space: Implications for education for sustainable development. *Journal of Teacher Education for Sustainability, 17*(1), 23-34. doi:10.1515/jtes-2015-0002

Kolesinski, M., Nelson-Weaver, E., & Diamond, D. (2013). Digital solidarity in education: Promoting equity, diversity, and academic excellence through innovative instructional programs. In T. Bastiaens & G. Marks (Eds.), *Proceedings of e-learn: World conference on e-learning in corporate, government, healthcare, and higher education* (pp. 2228-2233). Chesapeake, VA: Association for the Advancement of Computing in Education (AACE).

Kothari, C. R. (2004). *Research methodology: Methods and techniques* (2nd ed.). Mumbai, India: New Age International (P) Limited, Publishers.

Lawrence, S. A., & Calhoun, F. (2013). Exploring teachers' perceptions of literacy and use of technology in classroom practice: Analysis of self-reported practice in one school district. *Journal of Literacy and Technology, 14*(1), 51-71. Retrieved from http://www.literacyandtechnology.org/uploads/1/3/6/8/136889/jlt_v14_1_lawrence_calhoun.pdf

McKnight, P. E., & Najab, J. (2010). Mann-Whitney U test. In I. B. Weiner & W. E. Craighead (Eds.), The Corsini encyclopedia of psychology (pp. 960-961). Hoboken, NJ: John Wiley & Sons.

Meijer, R. (2016). Citizenship in Saudi Arabia. *The Middle East Journal, 70*(4), 667-673.

Mellor, N., & Rinnawi, K. (2016). *Political Islam and global media: The boundaries of religious identity*. New York, NY: Routledge.

Merriam, S. B. (1988). Case study research in education: A qualitative approach. San Francisco, CA: Jossey-Bass.

Merriam, S. B., & Tisdell, E. J. (2015). *Qualitative research: A guide to design and implementation* (4th ed.). San Francisco, CA: John Wiley & Sons.

Miles, M. B., & Huberman, A. M. (2001). *Qualitative data analysis: An expanded sourcebook* (3rd ed.). London, United Kingdom: Sage Publications Inc.

Mitchell, M. L., & Jolley, J. M. (2013). *Research design explained* (8th ed.). Belmont, CA: Wadsworth Cengage Learning.

Mossberger, K., Tolbert, C. J., & McNeal, R. S. (2008). *Digital citizenship: The Internet, society, and participation*. London, England: The MIT Press.

Orth, D., & Chen, E. (2013). The strategy for digital citizenship. *Independent School, 72*(4), 56-63.

Pallant, J. (2007). *SPSS survival manual: A step by step guide to data analysis using SPSS.* Retrieved from http://solo.bodleian.ox.ac.uk/primo_library/libweb/action/search.do?dscnt=1&vl(drStartDay6)=00&vl(60606418UI3)=all_items&scp.scps=scope:(OULS),scope:(NET)&tab=local&srt=rank&mode=Advanced&vl(1UIStartWith1)=contains&tb=t&indx=1&vl(drEndYear6)=Year&vl(freeT

Pusey, P., & Sadera, W.A. (2012). Cyberethics, cybersafety, and cybersecurity: Preservice teacher knowledge, preparedness, and the need for teacher education to make a difference. *Journal of Digital Learning in Teacher Education, 28,* 82-88. Retrieved from http://files.eric.ed.gov/fulltext/EJ960154.pdf

Ribble, M. S., Bailey, G. D., & Ross, T. W. (2004). Digital citizenship: Addressing appropriate technology behavior. *Learning and Reading with Technology, 32*(1), 6-9. Retrieved from http://files.eric.ed.gov/fulltext/EJ695788.pdf

Ribble, M. (2011). *Digital citizenship in schools*. London, England: ISTE & Eurospan.

Ribble, M. (2015). *Digital citizenship in schools: Nine elements all students should know*. Arlington, VA: International Society for Technology in Education.

Richards, R. (2010). Digital citizenship and web 2.0 tools. *MERLOT Journal of Online Learning and Teaching, 6,* 516-522. Retrieved from http://jolt.merlot.org/vol6no2/richards_0610.pdf

Sadaf, A., Newby, T. J., & Ertmer, P. A. (2013). Exploring factors that predict preservice teachers' intentions to use web 2.0 technologies using decomposed theory of planned behavior. *Journal of Research on Technology in Education, 45*(2), 171-196.

Saldana, J. (2015). *The coding manual for qualitative researchers.* Thousand Oaks, CA: Sage.

Shenton, A.K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information, 22*, 63-75. Retrieved from http://www.crec.co.uk/docs/Trustworthypaper.pdf

Simsek, E. (2013). New literacies for digital citizenship. *Contemporary Educational Technology, 4*, 126-137. Retrieved from http://www.cedtech.net/articles/42/424.pdf

Snyder, S. (2016). *Teachers' perceptions of digital citizenship development in middle school students using social media and global collaborative projects* (Doctoral thesis, Walden University, MN). Retrieved from http://scholarworks.waldenu.edu/cgi/viewcontent.cgi?article=3607&context=dissertations

Sreberny, A. (2015). Women's digital activism in a changing Middle East. *International Journal of Middle East Studies, 47*(2), 357-361.

Stone, B. (2010, January 09). *The children of cyberspace: Old fogies by their 20s*. Retrieved May 18, 2017, from http://www.nytimes.com/2010/01/10/weekinreview/10stone.html

Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. International *Journal of Medical Education, 2*(1), 53-55. doi:10.5116/ijme.4dfb.8dfd

Teo, T., & Lee, C. B. (2010). *Examining the efficacy of the planned behavior (TPB) to understand pre-service teachers' intention to use technology*. Retrieved from http://www.ascilite.org/conferences/sydney10/procs/Teo-concise.pdf

Weigel, M., James, C., & Gardner, H. (2009). Learning: Peering backward and looking forward in the digital era. *International Journal of Learning and Media, 1*(1), 1-18.

Wright, R. J. (2013). *Research methods for counseling: An introduction*. Thousand Oaks, CA: SAGE.

Yang, J. (2013). The theory of planned behavior and prediction of entrepreneurial intention among Chinese undergraduates. *Social Behavior and Personality, 41*, 367-376. doi:10.2224/sbp.2013.41.3.367

Zohrabi, M. (2013). Mixed method research: Instruments, validity, reliability and reporting findings. *Theory and Practice in Language Studies, 3*(2), 254-262.

APPENDIX A

DIGITAL CITIZENSHP QUESTIONS

Digital Citizenship Questions:

1. In your own words, describe what "digital citizenship" means?

2. Describe an example of a teacher behaving irresponsibly or unethically with regard to technology use?

3. Why do you think it is important for teachers to be good digital citizens?

4. Describe an example of an elementary or high school student violating these norms?

5. How can teachers teach their students to be good digital citizens?

6. How do you think you will be expected to model and teach digital citizenship in the future?

7. Is there anything else you'd like to say regarding digital citizenship?

APPENDIX B

DIGITAL CITIZENSHP SCALE

UNIVERSITY OF
NORTHERN COLORADO

Digital Citizenship Scale

Subscale	Items
Respect Yourself/Respect Others (*N* = 24) -- Etiquette -- Access -- Law	1. I believe that everyone has basic digital rights, such as privacy and the right of expression and speech.
	2. I believe that basic digital rights must be addressed, discussed, and understood by digital technology users.
	3. I need to be taught about the inherent dangers of overuse of digital technologies.
	4. I believe that creating destructive worms or viruses, creating Trojan Horses, and sending spam are digital crimes.
	5. I understand the health and well-being risks surrounding the overuse of digital technologies, such as addiction and stress.
	6. I believe that hacking into others' information, downloading illegal music and movies, plagiarizing, or stealing anyone's identification or property is unethical.
	7. In an online digital environment, I always respect others' opinion and knowledge.
	8. In an online digital environment, I always respect others' feelings.
	9. In an online digital environment, I always make sure not to interrupt others when it is their turn.
	10. I believe that digital technology users also have responsibilities, such as respecting others' basic digital rights.
	11. I immediately delete emails from a suspicious source or sender.
	12. When I feel unhappy or uncomfortable in an online digital environment, I try to express my feelings in a very rational way.

Subscale	Items
	13. I use email service to communicate with others
	14. I believe in the importance of maintaining good physical and psychological health in this digital world.
	15. I do not save any important information on public computers.
	16. I believe that understanding digital rights and responsibilities helps everyone to be productive.
	17. I believe that everyone should take responsibility for his/her online actions and deeds.
	18. I believe that the use of digital technologies must be a compromise between the earrings and negligence.
	19. Digital communication tools allow me to build new friendships in other parts of the world.
	20. I have antivirus and Internet security protection on my computer.
	21. I do not provide any unknown online parties with my personal information, such as bank accounts or credit cards.
	22. In digital communication, I respect others' human rights, cultures, and right to expression.
	23. Digital communication tools allow me to communicate with my friends easily.
	24. In an online digital environment, I try to make sure that everyone has an equal opportunity for speech and discussion.
Educate Yourself/Connect with Others (*N* = 11) -- Communication -- Literacy -- Commerce	25. Electronic commerce gives me better choices.
	26. Electronic commerce gives me more reasonable prices.
	27. I always buy legal goods.
	28. I do some research before buying anything from online stores.
	29. Electronic commerce does not conflict with my society's regulations.
	30. I love using electronic commerce tools (e.g., eBay & Amazon).

Subscale	Items
	31. I prefer electronic commerce over going to the market.
	32. I spend some time on social networks, such as Facebook and Twitter.
	33. I use digital communication to express my opinion, learn, and share expertise.
	34. I have been taught the new educational skills associated with digital technologies for the 21st century.
Protect Yourself/Protect Others (*N* = 11) -- Rights & Responsibility -- Safety (Security) -- Health & Welfare	35. I only practice electronic commerce for goods that I cannot buy from or find in the market.
	36. I always back up important data in a safe or external hard drive.
	37. I always protect personal and important information in password-protected files.
	38. I regularly change my passwords to protect my privacy.
	39. I always read the privacy statement before installing new software.
	40. I always do quick maintenance to remove unnecessary files and programs from my computer.
	41. I have been taught about the possible threats when using new digital technologies.
	42. I always visit trusted and harm-free websites.
	43. When I notice strange things happening to my computer, I take it right away to the maintenance center.
	44. I always find support when I encounter issues in using new digital technologies in my learning activities.
	45. I have been trained on how to integrate new digital technologies in my future teaching activities.
	46. I do not open any unknown or untrusted files.

APPENDIX C

CONSENT FORM FOR HUMAN PARTICIPANTS

CONSENT FORM FOR HUMAN PARTICIPANTS IN RESEARCH
UNIVERSITY OF NORTHERN COLORADO

Project Title:	The Extent of Comprehension and Knowledge with Respect to Digital Citizenship Among Saudi Arabia Teachers
Researcher:	Abdullah Saif Alqahtani, M.A., Ph.D. student Education Technology
Email:	alqa0717@bears.unco.edu
Advisor:	Mia Kim Williams, Ph.D. Educational Technology.
Phone:	970-351-2414
Email:	mia.williams@unco.edu

Purpose:

The purpose of the proposed mixed-methods study is to explore Saudi teachers' perceptions of their current knowledge and comprehension of digital citizenship and introduce the analysis of different points of view using qualitative and quantitative information gathered with the help of two different research methods. Additionally, this study seeks to explore how gender, grade level of teaching, and years of experience influence the perceptions of Saudi teachers about digital citizenship awareness. Ribble's characterization of the essential elements of digital citizenship (respect, educate, and protect) will be used to assess the extent of comprehension and knowledge of digital citizenship demonstrated by teachers practicing in Saudi Arabia.

_____
(Participant's initials)

Participation:

As a participant, you will be asked to complete one short interview of approximately 45 minutes where you will respond to semi-structured interview questions through a video discussing about your perceptions of digital citizenship awareness based on Ribble's subgroups of digital citizenship.

I do not foresee any risk by participating in this study. The interview is much like having an intellectual conversation with a colleague. Your answers and opinions will be kept confidential. The results of the interview and this signed consent form will be kept on a digital item (for example, disk, USB drive) and remained securely locked when not used for the analyses, and no other persons will have access to these data. You name will not be used in any relation to this research. A pseudonym will be used if your responses are quoted in the research. All data will be destroyed three years following data collection. If at any point during the interview you wish to take a break, or no longer participate in the study, you may withdraw without penalty.

If you have any questions about the design of the study or your role in the study you may contact the researcher at the email addresses or phone numbers indicated at the top of this consent form.

Costs and Compensations:

There is no cost to the participants for their involvement in this study more than the time invested in participating in the interview and for transportation related cost to arrive at the interviews. No compensation will be provided to participants in this study.

Risks and Benefits:

Foreseeable risks are not greater than those that might be encountered in day-to-day life or a conversation with a colleague about one's career goals. Participation in this study may have direct benefits by gaining insight into their own thinking about digital citizenship. Participation may benefit others by providing those employed at institutions of K-12 education with the information they can efficiently utilize in developing digital citizenship curricular content and how this influences students' awareness experience.

Confidentially:

The confidentially will be maintained during the entire course of data collection and analysis. The consent form will be stored separately (in a locked cabinet which is very safe and secure) from the data so that names cannot be linked to the information collected.

Please feel free to contact me or my research advisor if you have any questions or concerns about this research and please retain one copy of this letter for your records.

Thank you for considering participation in my research.

Sincerely,

Abdullah Saif Alqahtani

Participation is voluntary. You may decide not to participate in this study and if you begin participation you may still decide to stop and withdraw at any time. Your decision will be respected and will not result in loss of benefits to which you are otherwise entitled. Having read the above and having had an opportunity to ask any questions, please sign below if you would like to participate in this research. A copy of this form will be given to you to retain for future reference. If you have any concerns about your selection or treatment as a research participant, please contact Office of Sponsored Programs, IRB Administrator, Office of Sponsored Programs, 25 Kepner Hall, University of Northern Colorado Greeley, CO 80639; 970-351-1910.

Participant's Signature	Date
Researcher's Signature	Date

APPENDIX D

ONLINE CONSENT FORM FOR HUMAN PARTICPIANTS

ONLINE CONSENT FORM FOR HUMAN PARTICIPANTS
IN RESEARCH
UNIVERSITY OF NORTHERN COLORADO

Project Title:	The Extent of Comprehension and Knowledge with Respect to Digital Citizenship Among Saudi Arabia Teachers
Researcher:	Abdullah Saif Alqahtani, M.A., Ph.D. student Education Technology
Email:	alqa0717@bears.unco.edu
Advisor:	Mia Kim Williams, Ph.D. Educational Technology.
Phone:	970-351-2414
Email:	mia.williams@unco.edu

Purpose:

The purpose of the proposed mixed-methods study is to explore Saudi teachers' perceptions of their current knowledge and comprehension of digital citizenship and introduce the analysis of different points of view using qualitative and quantitative information gathered with the help of two different research methods. Additionally, this study seeks to explore how gender, grade level of teaching, and years of experience influence the perceptions of Saudi teachers about digital citizenship awareness. Ribble's characterization of the essential elements of digital citizenship (respect, educate, and protect) will be used to assess the extent of comprehension and knowledge of digital citizenship demonstrated by teachers practicing in Saudi Arabia.

_____
(Participant's initials)

Participation:

As a participant, you will be asked to complete an online questionnaire that will be used to collect appropriate statistical data to be used for investigating the scope of digital citizenship awareness exhibited by Saudi teachers based on Ribble's characterizations (respect, educate, and protect) and demographic characteristics (gender, grade level of teaching, and years of experience). Participation in this survey is voluntary and you may choose not to respond to any questions that they do not wish to answer. You may also withdraw at any time.

I do not foresee any risk by participating in this study. Your answers and opinions will be kept confidential. The results of the questionnaire and this signed consent form will be kept on a digital item (for example, disk, USB drive) and secured when it is not used for the analyses, and no other persons will have access to these data.

All data will be destroyed three years following data collection. If at any point during your participation you wish to no longer participate in the study, you may withdraw without penalty. If you have any questions about the design of the study or your role in the study you may contact the researcher at the email addresses or phone numbers indicated at the top of this consent form.

Costs and Compensations:

There is no cost to the participants for their involvement in this study more than the time invested in participating in the questionnaire. No compensation will be provided to participants in this study.

Risks and Benefits:

Foreseeable risks are not greater than those that might be encountered in day-to-day life or a conversation with a colleague about one's career goals. Participation in this study may have direct benefits by gaining insight into their own thinking about digital citizenship. Participation may benefit others by providing those employed at institutions of K-12 education with the information they can efficiently utilize in developing digital citizenship curricular content and how this influences students' awareness experience.

Confidentially:

The confidentially will be maintained during the entire course of data collection and analysis. Your name is not submitted and no identifying information will be kept; the data cannot be linked to your identity. Consent will be conferred when you choose to start the survey by clicking the link below. The email addresses of the participants will not be linked to survey responses to assure confidentiality. The researcher will make every possible effort to maximize confidentiality of your responses.

Please feel free to contact me or my research advisor if you have any questions or concerns about this research and please retain one copy of this letter for your records.

Thank you for considering participation in my research.

Sincerely,

Abdullah Alqahtani

Participation is voluntary. You may decide not to participate in this study and if you begin participation you may still decide to stop and withdraw at any time. Your decision will be respected and will not result in loss of benefits to which you are otherwise entitled. Having read the above and having had an opportunity to ask any questions, by clicking on the START SURVEY link you are indicating your willingness to participate in this survey. Please sign below if you would like to participate in this research. A copy of this form will be given to you to retain for future reference. If you have any concerns about your selection or treatment as a research participant, please contact Office of Sponsored Programs, IRB Administrator, Office of Sponsored Programs, 25 Kepner Hall, University of Northern Colorado Greeley, CO 80639; 970-351-1910.

I wish to participate in the study. START button

I do not wish to participation in the study. END button (will take participants to a thank you page.)

APPENDIX E

INSTITUTIONAL REVIEW BOARD APPROVAL

UNIVERSITY OF
NORTHERN COLORADO

DATE:	December 6, 2016
TO:	Abdullah Alqahtani, PhD
FROM:	University of Northern Colorado (UNCO) IRB
PROJECT TITLE:	[993570-1] The Extent of Comprehension and Knowledge with Respect to Digital Citizenship among Saudi Arabia Teachers
SUBMISSION TYPE:	New Project
ACTION:	APPROVAL/VERIFICATION OF EXEMPT STATUS
DECISION DATE:	December 6, 2016
EXPIRATION DATE:	December 6, 2020

Thank you for your submission of New Project materials for this project. The University of Northern Colorado (UNCO) IRB approves this project and verifies its status as EXEMPT according to federal IRB regulations.
Abdullah –

Thank you for your patience with the UNC IRB process and a well-prepared thorough application. Your application is verified/approved exempt and you may begin participant recruitment and data collection.

Please clearly amend your consent form for the interviews to note that interviews will be conducted through Skype (which is video) but ONLY audio data will be recorded. This should be amended before the research begins and does not need to be submitted for subsequent review.

Best wishes with your research.

Sincerely,

Dr. Megan Stellino, UNC IRB Co-Chair

We will retain a copy of this correspondence within our records for a duration of 4 years.

If you have any questions, please contact Sherry May at 970-351-1910 or Sherry.May@unco.edu. Please include your project title and reference number in all correspondence with this committee.