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Understanding BYOD Implementation Experiences of School Teachers and Administrators: A Phenomenological Perspective

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Understanding BYOD Implementation Experiences of School Teachers and Administrators: A Phenomenological Perspective

by
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Approval Page

This applied dissertation was submitted by Sophia Lafayette-Lause under the direction of the persons listed below. It was submitted to the Abraham S. Fischler College of Education and School of Criminal Justice and approved in partial fulfillment of the requirements for the degree of Doctor of Education at Nova Southeastern University.

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Abstract

Understanding BYOD Implementation Experiences of School Teachers and Administrators: A Phenomenological Perspective. Sophia Lafayette-Lause, 2020: Applied Dissertation, Nova Southeastern University, Abraham S. Fischler College of Education and School of Criminal Justice. Keywords: bring your own device, personal communication device, phenomenological, social media, digital citizenship

The use of technology to enhance instruction and learning is a daily expectation in public school classrooms throughout the State of Michigan and the United States. Schools are implementing bring your own device/bring your own technology (BYOD/BYOT) programs to meet the demand of providing students access to technology. As a result, students are bringing personal communication devices (cell phones, smartphones, tablets) to school in ever-increasing numbers. Students are using these devices in the classroom for a variety of purposes including the use of social media applications. However, school district policies have not been thoroughly updated to address the implementation of BYOD/BYOT programs, the use of personal communication devices, or social media applications.

The purpose of this study was to conduct a phenomenological study that gathered the lived experiences of educators working in schools located in Michigan on the implementation of BYOD programs that include the use of personal communication devices and social media applications to determine if these experiences could provide insights on potential BYOD program implementation and policy.

Face-to-face interviews of 12 participants at two high schools located in southeast Michigan resulted in several findings that could be used to guide schools considering BYOD implementation. These findings included the need to create a comprehensive plan of professional development for teachers involved in BYOD implementation, to adopt digital citizenship education that addresses social media use by students, and to follow create a BYOD policy review process that ensures regular updating and revising of BYOD policy to remain current with quickly changing needs of BYOD environments.

Table of Contents

Chapter 1: Introduction

Statement of the Problem

The topic. This study will focus on the lived experiences of K-12 public school educators in Michigan who have implemented "bring your own device" programs (BYOD) in their schools and how school policy around BYOD has influenced that experience. The study will investigate the role of personal communication devices and social media applications in schools and classrooms as part of BYOD implementation and how school policy supports or does not support the implementation experience. The lived experiences of these educators may help to guide future policy decisions around BYOD.

The research problem. The problem is that public schools are implementing BYOD programs without up-to-date acceptable use policies. Existing school policies have not kept pace with technological advances or social advances and the use of technology devices by students in schools. Acceptable use policies have not matched advances in educational technology and do not include comprehensive provisions for BYOD programs or the use of social media applications as part of the educational program. For example, most schools in Michigan have two policies addressing the use of technology by staff and students in schools. Acceptable use policies were originally written to dictate appropriate use of technology resources provided by the district, including, but not limited to, computing devices, applications and services, the school network, and school-provided email. These policies, when originally written, did not address personally owned mobile technology devices, including cell phones. As mobile devices, especially cell phones, became popular for use by K-12 students, most schools

reacted by banning their use in schools. The second school policy created in reaction to the proliferation of mobile devices typically goes by one of the following names: Electronic Communication Device Policy, Mobile Device Policy, or Personal Communication Device Policy. When first written, these policies contained specific language banning the use of the devices in schools, on school buses, and at school events during school hours.

In more recent years, the use of personal communication devices for educational purposes in the classroom has become increasingly popular. Implementation of BYOD programs is on the rise in public schools across the United States (Gupta, 2016; Johnson, Adams, Estrada, & Freeman, 2015). School implementation of these programs has outpaced school policy formulation or revision to govern these programs. For example, in Michigan ,many school districts' response to BYOD program implementation has been to slightly reword their existing personal communication device policies to add language that allows for the use of personal devices for "educational purposes only" in the classroom with permission of the school principal and teacher, rather than revise current acceptable use policies (see Appendix E).

Herein lies a problem and question. Schools have attempted to adapt policies that were originally created for a completely different purpose to govern BYOD programs. However, as personal communication devices, especially smartphones, have become more prolific, these original policies appear to not fully address appropriate use topics in BYOD program implementation. Furthermore, with the advancement of web-based applications, such as social media programs, these devices are being used for purposes that were not originally considered when these policies were first written. Having

multiple policies to address a single area may cause confusion and create a lack of cohesiveness. Because many of these policies do not specifically discuss BYOD programs, they may leave many educators who have begun implementing these types of programs in their schools trying to navigate muddy waters.

Two school districts in southeast Michigan that have implemented BYOD programs have developed administrative guidelines for BYOD. However, their school board-adopted technology policies did not specifically address BYOD. They too were still governed by multiple policies instead of one over-arching policy. The intriguing question here is, "What are the actual lived experiences of educators who are implementing BYOD programs in their classrooms and school administrators who are responsible for overseeing implementation of school programs and policy?"

Background and Justification

The use of computing devices in schools has become a commonplace event. Public K-12 schools have done their best to keep pace with the need to provide students access to technology to support teaching and learning in the classroom. As of 2015, "Public schools in the United States now provide at least one computer for every five students" (Editorial Projects in Education Research Center, 2016, para. 1). The pressure for schools to ensure a learning environment in which students have access to and utilize technology on a daily basis has been influenced by the adoption of the Common Core State Standards in June 2010 (Common Core State Standards Initiative, 2017b). The Common Core State Standards for K-12 English, and Literacy in History/Social Studies, Science, and Technical Subjects state,

> Students Who are College and Career Ready in Reading, Writing, Speaking, Listening, and Language…use technology and media strategically and capably. Students employ technology thoughtfully to enhance their reading, writing, speaking, listening, and language use. They tailor their searches online to acquire useful information efficiently, and they integrate what they learn using technology with what they learn offline. They are familiar with the strengths and limitations of various technological tools and mediums and can select and use those best suited to their communication goals. (Common Core State Standards Initiative, 2010, p. 7)

The Common Core State Standards set the expectation that schools will teach students how to be literate in the use of technology devices. This requires that schools find ways to provide students the opportunity to utilize up-to-date technology in their daily learning environment. However, this need for current technology is outpacing the ability of many schools to adequately fund the purchase of desired devices and equipment. Furthermore, school districts across the nation, and specifically in the State of Michigan, have witnessed a steady decline in the amount of funding they are receiving to support educational programs, purchase equipment, and pay employees. Since 2007, the State of Michigan has seen a drastic decline in student enrollment in public schools, which this decline in student enrollment has resulted in decreased state funding available to schools. Walled Lake School District, located in southeast Michigan, for example, has been negatively impacted by a decline in student enrollment. The district has had to cut approximately $100 million from its operating budget from 2007 to 2017, yet the cost to provide services to students has steadily increased. Furthermore, the rate of reductions is

higher than the amount of funding still needed to educate the remaining students (T. Les, personal communication, March 3, 2017). This funding dilemma is what many school districts throughout Michigan are facing, yet there remains a need to provide instructional technology tools in classrooms. Considering difficult budget times, many school districts in Michigan have struggled to ensure that all students have access to technology.

To help address the lack of funding, but increased need for technology tools, school districts are considering BYOD programs as one option to help close the gap. According to a 2018 report conducted by the Pew Research Center (Anderson & Jiang, 2018), teens aged 13-17 have regular access to mobile technology. According to the report, 95% of teens surveyed have access to a smartphone and 88% have access to a desktop or laptop. (p. 3) School districts are realizing that funding one-to-one programs are extremely costly and difficult to sustain. By leveraging the devices that students already own or have access to, coupled with district-provided devices, this can help create a one-to-one environment at a much lower cost. According to this same report, 45% of teens reported that they are "almost constantly online," while 44% reported they are online "several times a day" (Anderson & Jiang, 2018, p. 9). It only makes sense to allow students to utilize devices during school that they are already knowledgeable of and comfortable with.

As school districts are turning to BYOD programs to provide students access to instructional technology devices during the school day, administrators and teachers would benefit from school policies that help govern student use of devices under BYOD. Public K-12 schools are governed by school board policies that are typically created by local school district administration and adopted by local school boards. "School policies

and procedures are essentially the governing documents by which [a] school district and school buildings are operated" (Meador, 2016, para 1). Schools and school boards should consider creating policies that provide the necessary guidance to ensure effective use of mobile technology under BYOD, while also ensuring they are meeting legal requirements, technology standards, and the best interest of students, teachers, the school, and the community.

Public school districts in Michigan have started to implement BYOD programs to help them address the need for increased student access to mobile technology devices. In one suburban district in southeast Michigan, a K-12 BYOD policy was adopted in 2014. The school district outlined in the BYOD policy that "acceptable devices would be a personal technology device that is a privately owned, wireless electronic device such as a laptop, Chromebook, tablet, or smartphone" (Walled Lake Consolidated Schools, 2014, p. 1). Because of this policy, many secondary schools in this district have seen a huge rise in the number of students who come to school with a smartphone as their primary personal technology device (G. Diamond, personal communication, November 16, 2016). Although the intent of the BYOD policy was to allow smartphones for educational purposes, high school and middle school teachers and administrators have seen a rise in issues related to the non-educational use of smartphones throughout the school day as well as those outside of the school day that come into the school (C. Froning, personal communication, December 8, 2016). These administrators have found that many problems and discipline issues associated with the use of smartphones is a direct result of students' use of social media applications on these devices. Considering this situation in this school district brings into question if other school districts in Michigan that have

implemented BYOD programs have clear policies that outline the use of smartphones and social media applications. If these policies do not exist in these districts, do any model school policy or other policy standards exist that specifically address the acceptable use of personal communication devices and social media applications as part of a BYOD program? Further, where BYOD policy does exist, have teachers and administrators found these policies to meet their needs related to the implementation of a BYOD program? What is their lived experience?

Deficiencies in the evidence. Multiple searches for model policies and policy standard documents related to BYOD programs were conducted utilizing the education databases EbscoHost, ProQuest, and Google search. The search terms included: policy standards, policy elements, model policy, acceptable use, acceptable use policy, bring your own device, bring your own technology, bring your own device policy, bring your own technology policy, technology policy, and bring your own device policy models. A search was also conducted of school district websites of schools located in southeast Michigan. All schools had an acceptable use policy. Two schools had BYOD guidelines. However, no school board-adopted policies that addressed BYOD programs either as a stand-alone board policy or as language in an acceptable use or personal communication device policy were found. The search results did produce research and resources regarding components or areas to consider when implementing BYOD programs in schools (Ackerman & Krupp, 2012; Dixon & Tierney, 2012; Joyce, Akian, Farsaii, Spruill, & Tunks, 2012), BYOD policy considerations for individual users (Good Technology, 2012), technology infrastructure considerations when implementing BYOD (McCrea, 2015), BYOD usage considerations from the perspectives of college instructors

and college students (Santos & Bocheco, 2016), and a guide for school districts on acceptable use policies (Bosco, 2013). The search of the literature also resulted in finding some recommendations for what a BYOD policy should include, but did not yield any specific standards, models, or frameworks for how a BYOD policy should be designed. One resource provided suggestions on how to improve existing acceptable use policies to incorporate use of digital tools as well as consider moving from acceptable use to responsible use policies (Bosco, 2013). No specific models for the creation and design of school policy were found.

Audience

K-12 students, teachers, principals, curriculum directors, technology directors, superintendents, school board members, and parents would all benefit from guidance on how best to implement BYOD programs that include social media applications use in schools. Research on BYOD program implementation could serve as a resource and reference for any school district considering implementing these programs as well as inform related BYOD policy. Gathering the lived experiences of K-12 teachers and administrators who have implemented BYOD programs may help to provide guidance for future BYOD implementation and policy development.

Phenomenological Research

Phenomenological research is a qualitative research method designed to investigate the "lived experiences" of participants in reaction to a particular phenomenon (Fraenkel & Wallen, 2009, p. 428). According to Creswell (2013), "The basic purpose of phenomenology is to reduce individual experiences with a phenomenon to a description of the universal essence" (p. 76). In other words, by gathering the collected experience of

individuals around a given phenomenon the hope is to find overarching themes and ideas around the experience between everyone who experienced the phenomenon. Further explained, "phenomenology orients to the meanings that arise in experiences" (van Manen, 2014, p. 38). In phenomenological research, "the researcher hopes to gain some insight into the world of his or her participants and to describe their perceptions and reactions (Fraenkel & Wallen, 2009, p. 428), which will ultimately guide the researcher in making meaning out of their participants' lived experiences. "Phenomenologists generally assume there is some commonality to how human beings perceive and interpret similar experiences; they seek to identify, understand, and describe these commonalities" (Fraenkel & Wallen, 2009, p. 429).

According to Creswell (2013), to conduct a phenomenological research study, the researcher engages in the following steps:

1. Identifies the phenomenon to be studied.
2. Collects data from persons who have experienced the phenomenon through in-depth interviewing.
3. Develops a composite description of the phenomenon in terms of:
    a. "what" was experienced.
    b. "how" it was experienced.

The phenomenon in this study is the implementation of BYOD programs in schools and classrooms located in Michigan and the lived experiences of those educators involved with that implementation. Understanding what they experienced and how they experienced it; especially as it relates to school policy around BYOD, may provide insight into future policy considerations around BYOD programs.

Definition of Terms

Acceptable Use Policy (AUP). An acceptable use policy is a set of rules created by an organization that typically provides technology users guidelines on the appropriate use of organization-owned technology resources including but not limited to technology devices, software, email communication, technology systems, and the network. Acceptable use policies sometimes outline consequences for misuse of technology resources.

Bring Your Own Device (BYOD)/Bring Your Own Technology (BYOT). BYOD or BYOT refers to technology models where students bring a personally owned device to school for the purpose of learning (Brooks, 2008).

Cell Phone. A portable communication device that has phone and data communication capabilities that are accessed through a cellular service. For the purpose of this study the term cell phone represents the broad concept of all types of cell phones including mobile phones, smartphones, flip-phones, etc.

Common Core State Standards (CCSS). The CCSS were developed by the Council of Chief State Officers and the National Governors Association Center for Best Practices and are a "set of high quality academic standards in mathematics and English language arts/literacy. These learning goals outline what a student should know and be able to do at the end of each grade" (Common Core State Standards Initiative, 2017, para 2).

Digital Citizenship. Digital citizenship is shown when "students recognize the rights, responsibilities and opportunities of living, learning and working in an

interconnected digital world, and they act and model in ways that are safe, legal and ethical" (ISTE, 2020, para 2).

One-to-One. Refers to programs in which schools provide each student a laptop, computer, or other mobile device for their individual use as part of their daily learning experience.

International Society of Technology in Education (ISTE) Standards for Students. The ISTE Standards for Students outline the skills and knowledge needed by students to effectively utilize technology for learning in a digital world (International Society for Technology in Education, 2016).

Mobile Device. Mobile devices are "digital, easily portable, and can enable or assist any number of tasks including communication, data storage, video and audio recording, global positioning, and more" (Al-Okaily, 2013, p. 3). The general agreement is that mobile devices include smartphones, tablets, mp3 and portable media players, eBook readers, gaming devices, net books and cellphones that have Internet connectivity.

Mobile Phone. Term used by most of the world to describe a portable communication device that accesses cellular service for phone and data capabilities. The term cell phone is used in the United States (Prensky, 2005).

Personal Communication Device. A personal communication device is a term used by schools to indicate a mobile technology device brought into the school and owned by the student [or the student's family] (Brooks, 2008). This typically refers to cell phones, mobile phones, smartphones, tablets, and laptop computers.

School Policy. School policy, also referred to as education policy, is the collection of laws and rules that govern the operation of education systems (Boundless,

2016). At the local level, school policy is adopted by school boards and sets goals and assigns proper authority for how the school district should be governed and managed (Shiota, 2017).

Smartphone. A smartphone is a combination cell phone and handheld computer that usually includes but is not limited to the following functions: emailing, connecting to the Internet, gaming, playing music or movies, taking photos with camera, capturing video, GPS navigation, voice dictation, voice searching, and use of a variety of software applications (The Computer Language Company, 2016).

Social Media. Social media is an online application that allows for "interaction between persons in which they create, share, and/or exchange information and ideas in virtual communities and networks" (Carey, 2015). Examples of popular social media applications are Twitter, Snapchat, Instagram, and Facebook.

Summary

Chapter one presented the background and justification for why BYOD programs that include the social media applications is a topic that should be studied. This chapter established a basis for conducting a study utilizing a phenomenological research method to gather the lived experiences of educators working in schools located in Michigan on the implementation of BYOD programs that include the use of personal communication devices and social media applications. These lived experiences may help to inform policy decisions around bring your own device programs in public schools in Michigan and possibly throughout the United States. Chapter one concluded with definitions of key terms that will be used throughout this study. The next chapter reviews the academic

literature related to the topics of mobile device and technology use trends, BYOD programs in schools, school and technology policies, and phenomenological research.

Chapter 2: Literature Review

Introduction

Bring your own device (BYOD) initiatives have become popular in school districts around the United States to help support teaching and learning utilizing educational technology. BYOD, also referred to as bring your own technology (BYOT), in education, is the practice of allowing students to bring their own personal mobile technology devices to school for utilizing this technology to enhance their learning experience (Johnson et al., 2015). BYOD was identified as one of the top six technology trends in the next 5 years in K-12 education (Johnson et al., 2015). Schools implementing BYOD programs should have policies in place to help guide them in mitigating safety concerns for both the student and the school, ensuring proper use of devices, and promoting appropriate use of devices to enhance learning. Policy considerations is listed as one of five key areas that should be considered when implementing a BYOD program (Ackerman & Krupp, 2012). Ackerman and Krupp explained that, "since students will experience increased autonomy, they must be taught correct procedures of effective usage of devices to augment learning and eliminate improper usage. The school district is responsible for providing a safe, learning environment for all students" (p. 38).

Ackerman and Krupp (2012) also explained that because BYOD programs are fairly new initiatives, "research is limited regarding effective implementation and/or policy" (p. 38). Having sound policies in place to address students bringing mobile devices and smartphones to school as part of BYOD programs could be beneficial. Learning more about the lived experiences of educators who have implemented BYOD

may help inform BYOD implementation practices and provide recommendations for BYOD policy best practices.

Mobile Device and Technology Use Trends

The generation of young people born after 1996, known as Gen Z, have "no recall [of] a time before the Internet and mobile devices" (Dorsey, 2016). Millennials, the generation just before Gen Z, are identified "as a group generally accustomed to mobiles being at the center of their lives" (NMC Horizon Report, 2016, p. 36). It is not difficult to surmise that Gen Z already has the expectation of mobile devices being a daily aspect of their lives, including utilizing these devices while in school. A survey administered by The Center for Generational Kinetics (2016) found that young people from Gen Z believe that students should have smartphones at a younger age than the age that was identified by previous generations, including millennials (Dorsey, 2016).

The belief that mobile technology should be an integral part of the school experience is a trend supported by students, parents, teachers, and principals. Project Tomorrow, a national organization focused on "ensuring that today's students are well prepared to be tomorrow's innovators, leaders, and engaged citizens of the world" (Project Tomorrow, 2017b), has been conducting a national survey since 2003, called Speak Up, to collect data from students, educators, and parents about their opinions and use of technology in schools (Project Tomorrow, 2017a). Results from the 2014 Speak Up survey indicated that, of the 431,000 students in 6th through 12th grade surveyed, 75% found it important for them to be able to utilize mobile technology in school (Bott, 2014). This same report indicates that teachers and principals in K-12 schools are also increasingly holding more positive attitudes towards the use of mobile technology in

school. Fifty percent of principals surveyed indicated that it was “very important” that students have access to technology in the classroom, while 86% of these principals found it “important” (Project Tomorrow, 2014, p. 1). One area of the survey results that may have a correlation to the BYOD movement is administrators’ recognition of the positive impact of using mobile devices for learning. Their attitudes indicated a 41% increase from the previous year’s survey results (Horn & Staker, 2015).

The results of teachers surveyed in the 2014 Speak Up survey indicated that 77% of teachers thought mobile devices would increase student engagement in learning. Sixty-eight percent felt that mobile devices use is beneficial because it provides students access to online textbooks. Finally, 60% of these teachers thought that student ownership of the learning process would also be a positive outcome resulting in the use of mobile devices (Project Tomorrow, 2014, p. 1).

Parents who participated in the 2014 Speak Up survey also appear to have been supportive of the use of mobile technology in school. Of those parents surveyed, 58% of said they would buy a device for their child to be able to use in school, and 51% indicated that they would want their child in a class that utilized mobile technology for learning. (Bott, 2014). In that same survey, parents identified several benefits of their child being able to utilize mobile devices in the classroom. Seventy percent of those surveyed indicated that access to online textbooks would be beneficial, and 67% felt that students would have the ability to review class materials after school when leveraging mobile technology. Fifty-nine percent of these parents felt that mobile technology use would improve communication between school and home and 57% indicated that the use of

mobile technology in school would help increase student engagement (Project Tomorrow, 2014, p. 1).

The results from the 2014 Speak Up Survey indicate that there positive attitudes about the use of mobile technology in schools are held by students, teachers, administrators, and parents. Annual results from the Project Tomorrow Speak Up Survey have shown a steady increase in acceptance and expectation of use of mobile technology in schools (Horn & Staker, 2015). It is reasonable to assume that, with the increased rate of mobile device technology access across the United States, the use of mobile technology in schools and classrooms will continue to increase.

Bring Your Own Device Programs in Schools

BYOD programs started to be implemented in schools in the early 2010s as an outgrowth of one-to-one laptop initiatives in schools. One-to-one laptop programs were a result of educational technology research that indicated that "the full effects of computers in school cannot be fully realized until the technology is no longer a shared resource" (Bebell & Kay, 2010, p. 6). Based on a survey conducted by America's Digital Schools in 2006 of 2,500 top school districts, approximately 25% of school districts in the nation were implementing a one-to-one laptop program of some kind (eSchool News, 2006) in at least one grade. Furthermore, almost 50% of school district chief technology officers surveyed indicated that by 2011 it was highly probable that they would provide a computing device for each student (eSchool News, 2006). As of 2015, a survey of 332 district leaders indicated that 71% of the districts they represent had implemented some type of one-to-one program and 82% were considering "implementing or expanding a 1:1 mobile device solution in the next two years" (Logan, 2017, para. 3).The prediction by

district technology leaders in 2006 has shown to be accurate, as growth in one-to-one implementation in schools has steadily increased in the years since. Although there remains a lack of clear evidence on the impact that one-to-one programs have on student achievement (McLester, 2011), schools may feel the pressure of getting technology in the hands of students due to standards promoted by the International Society for Technology in Education (ISTE). ISTE sets forth a set of technology learning standards for students so that "today's students [are] prepared to thrive in a constantly evolving technological landscape" (International Society for Technology in Education, 2016, para. 1). Regardless of the desire to meet ISTE or CCSS standards, providing a laptop for every child in school is not always feasible. The cost of the initial purchase of laptops, maintenance of devices, necessary increases in network infrastructure, and the replacement of devices are often insurmountable barriers for many school districts to implement a one-to-one laptop program.

Many school districts, in response to their inability to create one-to-one environments, began to explore the option of allowing students to bring their own devices to schools. Through the combination of school-provided devices and student-owned devices, schools would be closer to creating a one-to-one computing environment, at a significantly lower cost. Furthermore, students have a higher comfort level with their own devices as compared to school-provided devices. A study on the use of school-issued mobile phone devices in urban high schools reported that students disliked using school-provided devices. Students indicated that the school-issued devices constrained their freedom and could not be used for social interactions (Philip & Garcia, 2015).

Furthermore, students did not like using the school-issued devices because they felt that school officials were "monitoring" their activities (Philip & Garcia, 2015, p. 691).

Bring your own device was introduced as a concept by the business world in 2004 (Ballagas, Rohs, Sheridan, & Borchers, 2004), and reflected the practice of allowing employees to bring their own smartphones or mobile devices to use in their work environment. Around 2009, post-secondary schools also began introducing BYOD programs at their institutions (Kiger & Herro, 2015), with K-12 schools and districts introducing them a few years later. According to the 2012 NMC Horizon Project, K-12 edition, mobile devices and applications were one of the top two technology trends expected to emerge within the year following the report and, as part of that trend, many schools were "beginning to implement 'bring your own device' BYOD programs" (Johnson, Adams, & Cummins, 2012, p. 4).

Studies began to emerge around 2010 that examined student use of mobile devices and cell phones or smartphones in schools (DeWitte, 2010; Enriquez, 2010). The outcomes of these studies have implications for the implementation of BYOD programs. Scholarly journal articles, white papers, reports, and other resources that provided guidance to K-12 schools on BYOD implementation, that specifically referenced the term BYOD, primarily started to appear in 2012 (Ackerman & Krupp, 2012; Adams, 2012; Devaney, 2012; Dixon & Tierney, 2012; Joyce, Akian, Farsaii, Spruill, & Tunks, 2012). Studies on the topic of BYOD programs in K-12 schools started appearing in 2014. Cristol and Gimbert's (2014) study investigated the impact that a BYOD program in 8th and 10th grade classrooms had on student achievement as measured by standardized test scores. The results of their study indicated that "there is likely some positive effect of

MLDs [mobile learning devices] in regards to student performance on standardized assessments" (Cristol & Gimbert, 2014, p. 28). Other studies published from 2014 to 2016 on BYOD in schools focused on the topics of teacher and student perceptions of BYOD, teacher and student practices around implementing BYOD and use of mobile devices, as well as the perceived benefits and negative implications associated with implementing a BYOD program in schools.

Mobile devices, as part of a BYOD program, can be utilized in many ways to enhance teaching and learning in school. Imazeki (2014) noted that, like hand-held clicker systems, BYOD devices can be used for administering quizzes, polling students, and conducting auctions or marketplace simulations. In addition, unlike clicker systems, mobile devices can also be used to gather open-ended responses from students, provide students the opportunity to respond asynchronously, and participate in back-channel discussions (Imazeki, 2014). Hirano (2015) found that in his study of factors that influenced teacher adoption of BYOD, the most common ways devices were used in classrooms were "listening to music, lookup information, use interactive application, poll students to collect data, and record video for projects" (p. 84).

Several studies identified positive outcomes or benefits from implementing BYOD programs in their schools. Instant access, increased student engagement, student buy-in, students being more comfortable with their own device, and students being more productive were all cited as advantages of BYOD in Hirano's (2015) study. In a study that investigated the results of a 2-year implementation of a BYOD program in a secondary school in New Zealand, researchers concluded that there was "improvement in the digital skills of students and teachers, increases in opportunity for individual mobile

communications and collaboration for learning activities and also the advancement in social and personal development of students (Parsons & Adhikari, 2016, p. 78).

Teachers who implemented BYOD in an elementary school studied by Scholz (2016) indicated through surveys and interviews that the BYOD initiative helped to "provide increased access to the technologies needed by students, increased the ratio of mobile devices, and supplemented the number of school devices available" (p. 185).

Several of the studies on BYOD also provided findings regarding factors that influenced the readiness and/or willingness of teachers to adopt BYOD as well as their opinions regarding its implementation. Hirano (2015) reported that the more favorably teachers perceived the usefulness of BYOD, the more likely they were to implement it in their classroom. He also concluded that if the overall school culture supported new technologies, teachers were more likely to adopt BYOD (Hirano, 2015). This was similar to that of another study, in which teachers who identified the "overall atmosphere" as being supportive of BYOD were more likely to implement BYOD in their own classroom (Fincher, 2016 p. 107). In this same study, Fincher also determined that time was a major contributing factor to teacher adoption of BYOD. Time, in this study, referred to time with students, time for planning, and time to collaborate with colleagues (Fincher, 2016).

Many studies have identified challenges and concerns related to the implementation of BYOD. In one case study, (Cardoza & Tunks, 2014) conducted in a secondary private school setting, the researchers reported that most of the concerns that emerged around the implementation of BYOD focused on the teachers themselves, not students. Teachers expressed concerns about the ability to implement BYOD, having enough time for preparation related to utilizing the technology, feeling like they needed

additional information, and wanting a better understanding of their supervisor's expectations around implementing BYOD. The results also indicated that the majority of teachers interviewed were utilizing BYOD at the "mechanical" level, in which the "individual is using the innovation but is challenged by the day-to-day use of the innovation, time, and procedures for implementation" (Cardoza &Tunks, 2014, p. 299). Hirano (2015) reported that the middle and senior high school teachers he interviewed felt that there were several disadvantages to implementing BYOD. This included the potential misuse and abuse of devices, teacher lack of control, the inability to keep students off social media, and the perception that it makes students lazy. Similarly, Imazeki (2014) also noted that a negative consequence of students using their own phones (as part of BYOD) is that the devices can be a distraction. Many of the results and concerns identified in the BYOD studies provide helpful insight into potential BYOD policy considerations moving forward; they will be discussed in greater detail in a different section.

Cell phones in schools and universities. Many BYOD initiatives in schools started with the idea of students bringing their own laptops or tablets to supplement school-provided devices. Cell phones, in many schools, especially prior to BYOD initiatives, were typically banned devices that students were not allowed to use during school hours. According to a poll conducted by Common Sense Media in 2009, 69% of schools in the United States banned cell phone use in the classroom (as cited in Thomas, O'Bannon, & Bolton, 2013). Many initial studies about the use of cell phones in schools focused on cell phone use at the university level and how the university and professors were responding to this new "disruption" in classes. These were not instances of

sanctioned BYOD programs, but instances of college students bringing their phones to class and campus libraries as part of a growing trend of increased cell phone ownership. Lever and Katz (2007) conducted a study on how various campus libraries in the United States were creating policies to respond to "an invasive mobile technology" (p. 1). Many subsequent studies about cell phones at the college level also focused on cell phones as distractions. Tindell and Bohlander (2012) studied the impact of cell phone use and text messaging by surveying college students' cell phone practices. They found that "95% of students bring their phones to class every day, 92% use their phones to text message during class time, and 10% admit they have texted during an exam on at least one occasion" (p. 1). Langmia and Glass (2014) focused on the perspective of faculty members at a university and how they handled smartphone distractions in their classrooms. Their study results indicated that there was a "significant correlation between smart phones use and classroom distractions" (p. 22). Berry and Westfall (2015), in their study on cell phone policies in the classroom, focused on what types of policies professors were making in their classrooms to mitigate cell phones as a distraction, and in what types of ways students were using their phones and potentially breaking policies. Their results found that, "the policies most frequently implemented by instructors are typically perceived by students as the least effective" (p. 62) and suggest a need for policy revisions that are more effective.

Berry and Westfall's (2015) study was one of the only studies previously identified to discuss how cell phones in the university classroom have the potential to be useful tools to enhance student learning. Berry and Westfall (2015) suggest that devices can be used to find supplementary information, take pictures of materials on the board or

in the classroom, utilize the video or voice recorder, and used as clickers to provide feedback. The results of their study indicate that students' use of cell phones may cause a distraction to learning. The results from the 400 college students they surveyed indicated that 81.2% of students checked their phone, on average, at least once per class period. Of that percentage, 23.8% checked their phones three to four times a period, and 20% checked their phones more than five times per class period (Berry & Westfall, 2015). The act of a student checking his or her phone presents a distraction to others, as the researchers found that "more than 90% of students claim to notice when other students check their phones" (p. 65). The inference here is that if students are noticing others checking their phones, then their attention is distracted from learning activities. However, the researchers also pointed out that only 12% of students indicated in the survey that watching other students check their phone negatively impacted their academic performance, yet 31% of those same students admitted they had missed information while checking their phones or texting (Berry & Westfall, 2015). Professors in this same study not only indicated concerns about cell phones being potential disruptions in the classroom but showed concern for the potential of cell phones being used to commit academic dishonesty. Interestingly, only 6.5% of college students in the study admitted to using their cell phone for cheating (Berry & Westfall, 2015).

Concerns expressed about the potential negative impact that cell phones can have in K-12 schools are similar to findings from the post-secondary studies. The potential negative impact these devices may have may also be why cell phone use is often banned in K-12 schools. In her study on perceptions of mobile phone policy and mobile phone use from the perspective of various stakeholders at a public high school in Pennsylvania,

Thackara (2013) identified five rationales for why mobile phone policies are needed in schools: to reduce classroom disruptions, to maintain security of the members of the school community, to protect the privacy of students and staff, to prevent cyber bullying, and to reduce occurrences of academic dishonesty.

Thackara determined that the "overwhelming perception from all stakeholders, [which included students, teachers, and parents] is that mobile phone use in classrooms causes a disruption in the educational process" (p. 86). Both the university studies and the Pennsylvania school study provide useful insights into factors that could help inform acceptable use policy development that addresses BYOD implementation in K-12 schools.

Studies on cell phone use in K-12 schools started to appear after 2012, when the increase in student ownership of cell phones, specifically smartphones, was starting to tip the scales, with more students having a smartphone than not. In 2012, 44% of Americans over the age of 12 owned a smartphone (Johnson et al., 2012). By 2014, the Pew Research Center study found that 73% of teens aged 13 to 18 either owned or had access to a smartphone. Furthermore, teacher and administrator perceptions about students' use of personal cell phones and mobile devices in schools was also shifting. A 2009 survey conducted by Project Tomorrow found that 76% of teachers and 44% of principals though that mobile devices in the classroom would be a distraction (Project Tomorrow, 2010). Comparably, Mobile Future in its 2014 survey of teachers reported that 73% of middle-and high school teachers use cellphones for classroom activities and 81% of those surveyed thought mobile devices can enhance learning (Mobile Future, 2014). That same year, the Project Tomorrow Speak Up survey stated that 51% of principals surveyed

indicated that they allowed students to use their own mobile devices in school (Project Tomorrow, 2014). A study that investigated teacher perspectives on cell phone use in the classroom determined that the majority of teachers surveyed supported the use of cell phones in the classroom and 59% of them indicated that cell phones could increase student engagement (Thomas et al., 2013).

Although many studies of cell phone use in schools that started to appear in the early to mid-2010s were not in schools that had officially instituted a BYOD program, the schools in the studies were in practice supporting a BYOD program concept, as they all focused on the notion of students using their own personal cell phones or smartphones in the classroom for learning. Several studies were found that focused on the integration of cell phones in K-12 schools in which the researchers investigated the perceptions of their use to enhance learning and the primary ways they are used to support learning. One study on the use of cell phones in a Montessori secondary school reported many advantages and benefits of the use of cell phones in the classroom. Teachers identified increased productivity, "anytime, anyplace learning," reduced classroom disruptions, reduced movement and voice-level, effective communication and collaboration with the teacher and between students, as well as students becoming more self-directed (DeWitte, 2010), all as positive outcomes resulting in cell phone use by students in the classroom. Since this was an earlier study, many of the students were using phones that were not smartphones and the primary features they were accessing were the calculator, calendar, camera, text messaging, and Google. In later studies, in which the focus shifts from student use of cell phones to smartphones, even more educational uses of these devices are identified. These additional uses include Internet, email, YouTube, e-readers, social

media, and a variety of applications (apps) available for use specifically with smartphones (Thackara, 2013; Walker, 2013). Although studies on cell phone and smartphone use have reported that the use of these devices can enhance learning, these same studies found that concerns around classroom disruptions, cheating, and inappropriate use of devices are important areas that need to be addressed (Thomas et al., 2013; Walker, 2013), potentially through school policy. The concerns identified in these K-12 school studies on cell phone use in the classroom were quite like the concerns that were identified in the BYOD-specific and university studies on cell phones presented earlier, all of which can help to inform a model policy on BYOD in school, especially since the primary device that students are bringing to school as part of BYOD is the smartphone.

Social media in schools. One rising trend connected to teen use of mobile devices is the use of social media applications. Many schools take the approach to ban or discourage the use of social media. As of 2015, 76% of teens aged 13 to 18 surveyed by the Pew Research Center were users of social media. Of those students, 71% reported that they used more than two social media sites on a regular basis (Lenhart, 2015). The data indicate that students are using social media regardless of school policies. Issues resulting from the negative use of social media by teens, whether during or outside of the school day, is an area in which many school administrators are struggling to appropriately respond. Furthermore, teens themselves do not necessarily think that social media use has a negative effect on their lives. In a 2018 study by the Pew Research Center, 31% of teens aged 13 to 18 indicated that social media use has “a mostly positive effect” and

another 45% responded that it had “neither positive nor negative effect.” (Anderson & Jiang, 2018, p. 7).

Not only are administrators responsible for ensuring students’ safe and appropriate use of social media, they also must monitor and ensure appropriate use by teaching staff. Schools that implement BYOD programs expect teachers to embrace and integrate technology for enhancing student learning. Teachers interact with students using technology in a multitude of ways, including email, messaging apps, websites, blogging, and social media. Additionally, teachers are also using technology for their personal use outside of their role as classroom teachers. Teachers are not only expected to teach their students proper technology use etiquette but must hold themselves accountable to high standards of their own technology use in and outside of the classroom as well.

School administrators are responsible for ensuring that high standards of use are maintained at every level and must respond appropriately when they are not. In a roundtable discussion with assistant principals moderated by Levin-Epstein (2016), participants described how the role of the assistant principal has changed with the increase in social media use in schools. They emphasized the importance of promoting the use of technology by teachers and the need to provide professional development and support for integration into teaching and learning. Participants also recognized that the role of the assistant principal in regard to oversight of new technology and social media requires “monitoring Internet civility and promoting social responsibility” (Levin-Epstein, 2016) among both students and teachers. In a study of social media use by students in a Canadian secondary school (Corrigan & Robertson, 2015), vice-principals who were surveyed as part of the study “speak of a ‘new dimension’ to their role and the

[increased] amount of time spent navigating through social media" (p. 123) to deal with online conflict and cyberbullying. These vice-principals were finding themselves not only dealing with negative incidents of social media use during the school day, but also "responding to cyber events which occur off school property and outside of class hours in order to maintain student safety" (Corrigan & Robertson, 2015, p. 123).

In looking at the role of school administrators in regulating the use of social media, Smale and Hill (2016) identify the responsibilities of the principal and offer a framework that can "ensure that both the safety and freedom of speech rights remain intact both within and beyond the school setting" (p. 19). They emphasize that "it is an essential duty of a school principal to provide students, teachers, parents and community members with the skills and knowledge necessary for safe and appropriate use of digital technologies" (p. 19) and suggest that this should be done through writing "balanced" policy that addresses a safe learning environment and the right to freedom of speech.

The Consortium for School Networking (CoSN) suggests that schools rethink their policies on social media and mobile devices and permit their use in schools.

> The most powerful reasons to permit the use of social media and mobile devices in the classroom is to provide an opportunity for students to learn about their use in a supervised environment that emphasizes the development of attitudes and skills that will help keep them safe in and outside of school. (Consortium for School Networking, 2011, p. 2)

CoSN suggests that this can be done, not only through policy writing, but through providing professional development that emphasizes "the ethical, legal, and practical

issues related to social networking and mobile devices in and out of the classroom" (Consortium for School Networking, 2011, p. 7).

Adolescents have shown that they highly enjoy interacting with their peers through social media. Teachers and administrators can leverage this knowledge to use social media platforms to enhance learning. As the use of social media in schools continues to become more prevalent by students and teachers, schools can consider how social media applications can be leveraged to truly enhance student learning.

In a study on the use of Twitter an American university, researchers indicated that students perceived the use of Twitter by professors to provide information on practical issues or topics as the most useful reason out of 14 options. Despite this ranking by students, the study results showed that faculty were only using Twitter for this purpose 4.2% of the time (Knight & Kaye, 2016). Professors' highest usage of Twitter was for advertising university activities (62.5%) and sharing ideas or publications (58.3%). However, students ranked the usefulness of these two activities as 11th and 7th, respectively, in terms of their perceived usefulness (Knight & Kaye, 2016). Other results from the study showed that students were four times more likely to follow famous people than professors, that they were much more passive in their use of Twitter than were professors, and the students' primary interactions were with their own friends. Professors, on the other hand, used Twitter more often to share information, organize events, and network with new people as primary activities (Knight & Kaye, 2016). Overall, researchers found that "the more interactive the activity, the less likely students were to rank it highly, the more passive, the higher the rank" (Knight & Kaye, 2014, p. 151).

The results by Knight and Kaye (2014) were similar to what Lu, Hao, and Jing (2016) reported in their study regarding the use of social media by secondary students in Hong Kong. Students who participated in this study, from both a private and a public high school, were asked how they interacted with social media content. The results indicated that they used social media the most for consuming content, while they used social media the least to create content. This suggests that these students also preferred a more passive, rather than active, use of social media. One interesting result from this study was that student use of social media to create content was much higher in school than outside of school (Lu, Hao, & Jing, 2016). This may imply that teachers play a significant role in influencing the way in which students leverage social media for learning.

Other studies regarding the use of social media by high school students have had slightly different results. Kaya and Bicen (2016), in their study on the use of Facebook by high school students in Turkey, suggested that students had a "high tendency" to use Facebook for sharing content (p. 376). Survey results from a group of secondary students in Ontario, Canada reported that 73% of students had used Facebook for educational purposes. Among the benefits of Facebook use identified by students were "collaboration, extra help, homework discussions [and] self-organization" (Fewkes & McCabe, 2012, p. 96). The results of these two studies on secondary student use of Facebook indicate a more active role by students when using social media as compared to the two previous studies. However, these differences could be due to cultural factors between students being surveyed from four different countries: the United States, Hong Kong, Canada, and Turkey. Causal factors for differences could also be due to how

students utilize specific social media applications differently. It cannot be assumed that students' attitudes regarding the usefulness of one social media application can be broadly applied to all other social media applications. These results help provide teachers and administrators some possible motivating factors of student use of specific social media applications. Seeking understanding regarding why and how students use specific social media applications may help educators integrate these applications in ways that students deem useful and beneficial as well as help inform policy related to their use in school.

Schools and school leaders are responsible for providing a safe environment for students; therefore, it is important that they consider how to keep students safe when using social media. The term "digital footprint" has been coined to describe the "trail of data you create while using the Internet" (Christensson, 2014, para. 1). This data trail can be created through visiting websites, email, social media use, blogging, and providing personal information to online sites. Students oftentimes are not aware how their online activities, especially social media activities, can impact their digital footprint. In a campaign to help university students at the University of Edinburgh manage their digital footprint, Osborne and Connelly (2015) identified several themes that students and professors should be aware of when using social media applications. These themes have implications for students, teachers, and administrators in K-12 schools as well. The first theme they identify is "online identity and self-presentation" (Osborne & Connelly, 2015, p. 358). Students' online activities can create an online identity of themselves that can be perceived positively or negatively. Helping students become aware that everything they post contributes to their digital footprint and can impact how others might view who they

are may be beneficial. Students can control their online identity by presenting information about themselves in a positive light, and avoid posting negative, inappropriate information. A second theme regarding managing one's digital footprint identified by Osborne and Connelly (2015) was "control, privacy, and identity" (p. 358). It is important for students to understand privacy settings when utilizing social media and other online applications and to understand what information about themselves they may be unwittingly sharing to organizations who own these applications. Students need to recognize if there is the potential for their personal information to be shared or accessed without their knowledge when choosing to use various applications. Students should consider if they will keep their identity anonymous or provide public access. Both choices can have implications on a student's perceived identity. These factors identified by Osborne and Connelly (2015) can have an impact on a student's digital footprint. School personnel, when encouraging the use of social media, should consider how these activities may impact a student's digital footprint. Policies and procedures regarding the use of social media in schools should address these themes to ensure safe and wise use of social media by students.

Freedom of speech is an additional area that school policy makers should take into consideration when developing policy that guides teacher and student use of social media. Teachers are often held to a different standard of expectations regarding statements they make on social media applications as compared to students. These expectations can be applied to teachers regardless of whether their comments are part of personal use or school use of social media. Teachers should consider whether their comments could "poison the school environment and seriously compromise her standing

as a teacher…or is overly disruptive to the learning environment" (Vasek & Hendricks, 2016, p. 7). Teachers who have legally fought their dismissal from teaching positions for personal use of social media have lost their case when the use was shown to negatively impact or disrupt the school environment, to cause a loss in the faith of the teacher, to be a violation of a code of ethics, or to negatively impact the effectiveness of his or her teaching ability (Vasek & Hendricks, 2016). To help teachers appropriately use social media both off and on school campuses, "school leaders should ensure that policies are in place that clearly define the limits of acceptable use of social media by teachers" (Vasek & Hendricks, 2016, p. 8). One suggestion for teachers that may help guide them in their use of social media is to consider "not posting anything on a social networking site that they would not post on the bulletin board outside of their own classroom" (Smale & Hill, 2016, p. 26). Further, when educators are communicating with students via social media, they may want to consider remembering the following guidelines offered by (O'Donovan (2012) to be "TAPed" (p. 36):

- Transparent – maintain openness, visibility and accountability
- Accessible – consider all electronic communication to be a matter of record
- Professional – use correct grammar and tone, choose appropriate subject matter and choose words that are courteous

These recommendations from O'Donovan, as well as previously discussed recommendations and research, provide a solid set of considerations for school leaders looking to develop school policy for BYOD programs that includes the use of social media applications as part of their BYOD implementation.

School and Technology Policies

A school or education policy is a "collection of laws and rules that govern the operation of education systems" (Boundless, 2016). Education policy can be developed at the federal, state, and local level. Although federal policies can have a significant influence on school governance, most education policy is formed at the state and local level. "In many ways, local school policies exert a much more immediate and consequential impact on students and teachers than do policies generated at higher levels" (Duke & Canady, 1991. p. xi). School policy can be considered a good policy if it supports the achievement of school goals without negatively impacting students or certain groups of students. "A good school policy is one that increases the likelihood that school goals will be achieved without adversely affecting any particular group of students" (Duke & Canady, 1991, p. 145).

Educational leaders play a key role in the education policy world. They are expected to understand, implement, influence, create, evaluate, and revise education policy. Educational leaders must not only understand how policy might influence the educational experience, they must consider the potential consequences of implementing policies (Bell & Stevenson, 2006). The policies that educational leaders are responsible for formulating and creating cover a wide area of school governance. Regulations on the use of technology in schools is one important policy area that educational leaders are responsible for.

The advent of public use of the Internet in the mid-1990s served as one of the first great influencers of technology policy in schools, as it caused computer technology in schools to be utilized in completely new and different ways than had been previously

possible (Dynamic Web Solutions, 2008). Computers could now be used to easily access information and connect with people from all over the world at incredibly fast speeds. The federal Child Internet Protection Act (CIPA) has also served as a great influencer on local school technology policy development. Enacted by Congress in 2000, CIPA requires any school or library that receives discounts on technology through the federal E-rate funding program to have an Internet safety policy that contains specific parameters. The policy must address each of the following elements:

- Access by minors to inappropriate matter on the Internet;
- The safety and security of minors when using electronic mail, chat rooms and other forms of direct electronic communications;
- Unauthorized access, including so-called "hacking," and other unlawful activities by minors online;
- Unauthorized disclosure, use, and dissemination of personal information regarding minors; and
- Measures restricting minors' access to materials harmful to them. (Federal Communications Commission, 2016, para. 4)

By 2001, 96% of all public schools had technologies and procedures as part of their "Internet use policy" in place to control student access to inappropriate material while utilizing school technology resources (Kleiner & Farris, 2002). These policies, written at the local level, are often referred to as technology use, network use, and acceptable use policies or some combination or variation of these. After reviewing school board-adopted technology policies in school districts throughout southeast Michigan, three types of policies were primarily found: a network and/or technology policy, an

acceptable use policy, and an electronic device, personal device, or cell phone policy. These policies typically outline a series of rules and regulations addressing the use of school-owned or personally owned devices and technology resources. Some of the policies include consequences, while others refer to the student code of conduct for specific consequences related to violations of policy. Although some of the policies promote responsible use of technology resources, most focus on what students should not be doing with the technology they are using. Many of the policies mention that technology use is beneficial to student learning; however, little to no language is provided in these policies regarding how the technology should be used to improve learning, nor are there expectations for teacher integration of technology in the classroom. School technology policies reviewed are primarily written from the standpoint of how to emphasize control of use versus how to leverage resources for academic purposes.

Acceptable use policies in schools. Although CIPA was a great influencer of technology policy and use after 2000, prior to that time schools began enacting policy to address acceptable use of technology in the early- to mid-1990s in conjunction with the advent of the Internet and World Wide Web. In 1995 an anthology of Internet acceptable use policies was compiled in 1995 by the National Association of Regional Media Centers (NARMC) as a result of a discussion that occurred at the organization's October 1994 board meeting on the topic of Internet use in the classroom (Finney, 1995). One important document that was included as part of this anthology was an article written by Barry Fishman and Roy Pea in 1994. It provided guidance and recommendations on the development of network use policies for K-12 schools and appears to be one of the first guiding documents on the topic. Current AUP policies typically have two primary

purposes: 1) protecting students from harmful material, and 2) providing access to digital learning resources on the Internet (Pierce, 2012).

A search of the literature indicated that the number of scholarly articles and research on the topic of acceptable use policies is very limited. The earliest research on acceptable use policies primarily focused on three areas: the status of acceptable use policies in schools, the primary content found in AUP policies, and the effectiveness of these policies (Beaver, 2003; Flowers & Rakes, 2000; Sun & McLean, 1999; Wojtylewski, 2006). After the 2006 study that analyzed the content of technology policies in select school districts in Illinois (Wojtylewski, 2006), the literature is practically devoid of any further discussions on the topic until 2010. In the early 2010s several articles were published with recommendations to schools to consider revising their acceptable use policies considering the increasing use of mobile devices and social media applications by K-12 students. In 2010, the Principals Partnership published an article on the topic of developing an acceptable use policy that specifically addresses social media use. The author, Williamson (2010) emphasized that "there is a tremendous opportunity for improving education through the use of social media…but there is also potential risk because social media can be used to access age inappropriate information and to engage in aggressive online behavior" (p. 1). The Consortium for School Networking (CoSN) published two resources that also addressed the need for schools to revise existing policies that supported digital learning tools (Bosco, 2013; Consortium for School Networking, 2011). According to COSN, banning devices and social media applications is not a solution to the rise of use by students. Instead, they suggest that school AUP policy should focus on responsible use, education of students, and

professional development for teachers (Consortium for School Networking, 2011). Furthermore, CoSN advocates for school districts to consider moving away from acceptable use policies and embracing responsible use policies instead (Bosco, 2013). According to Harris and Cusick (2014) "AUPs are a list of things users should not do and carry consequences for misuse. Responsible use policies advise users what they can do with school technology" (p. 3). The literature suggests that a need exists for schools to re-examine the policies they currently have in place to address student use of mobile devices and social media applications in his or her learning process.

BYOD policy research. Results of several research studies on BYOD programs in K-12 and post-secondary education institutions had similar findings for policy or program recommendations when implementing a BYOD program. These recommendations may also help to inform the revision of acceptable use policies to address BYOD programs.

Several of these studies discussed the need to include teacher and/or student input as part of BYOD policy development or to inform its development (Becker, 2013; Little, 2014; Santos & Bocheco, 2016; Selwyn & Bulfin, 2016). One study that examined Australian secondary students' perceptions about the regulation of technology suggested as a result of the research findings that the development of policy regarding student technology use should be done through "mutual understandings" and "collective agreements" between "students, teachers, and school authorities" (Selwyn & Bulfin, 2016, p. 289). Becker (2013) suggested from the results of his study on policy formation regarding student use of technology in postsecondary classrooms that, "institutional

policymakers should continually review policies on student use of technology in the classroom based on related literature and instructor and student feedback" (p. 5).

A second theme that emerged from the literature related to BYOD policy was related to professional development needs for instructors involved with BYOD implementation (Ackerman & Krupp, 2012; Becker, 2013; Gao, Yan, Zhao, Pan, & Mo, 2014; Jones, 2014; Santos & Bocheco, 2016). Findings from Jones' (2014) study of high school teachers' perceptions of BYOT implementation suggested that not only should teachers participate in professional development, but they should be involved in planning the professional development. Based on their study of BYOD use and policies in post-secondary classrooms, Santos et al. (2016) suggest that BYOD policy should "encourage instructors to attend ongoing training, workshops and conferences to support effective integration of BYOD in class" (p. 59).

Not only does the literature suggest that professional development should be an integral part of BYOD implementation and policy, findings also suggest that some type of educative programs should be in place for students as well. If students are taking advantage of BYOD use in the classroom, clear policies will help guide the proper use of that technology. Becker (2013) recommends that "post-secondary instructors…communicate, careful, comprehensive classroom policy addressing student use of technology in their classroom" (p. 5). However, communicating policy alone to students may not be enough. Santos et al. (2016) suggested that universities that implement BYOD should "engage students in training or workshops to develop awareness of the advantages and disadvantages of BYOD in the classroom" (p. 59). Ackerman and Krupp (2012) also recommend that K-12 schools that implement BYOD

should teach students “correct procedures of effective usage of devices to augment learning and eliminate improper usage” (p. 38). These studies suggest that it is not only important that students are aware of BYOD policy, but that expectations about the proper use of devices are clearly communicated and students should receive training on the responsible use of devices.

One final theme that emerged in the literature regarding BYOD policy at all levels was discussion on consequences for breaking BYOD policy. While Ackerman and Krupp (2012) and Gao et al. (2014) suggest that BYOD policies need to include consequences for breaking policies and address how to handle distractions and disruptions, other studies examined specific types of consequences that could be part of a BYOD policy. Berry and Westfall (2015) examined different types of consequences faculty members meted out at a post-secondary institution in reaction to disruptions caused by college students’ use of devices in the classroom. Survey results of college students who participated in the study indicated that the most effective policies implemented by their professors to deter the disruptive use of mobile devices in the classroom were “grade reductions and removal from class…followed by instructor confiscation or interception of student phones” (p. 68). Little (2014) found that, based on the results from the questionnaire she gave high school students, detention as a consequence for misuse of phone was not a predictive indicator of reduction in student mobile device use. Both the study by Berry and Westfall (2015) and Little (2014) indicate a BYOD policy may need to include confiscation of the student’s device as an effective consequence for its misuse. Finally, in a study conducted by Kay, Benzimra, & Li (2017) that looked at distractions of bring your own device programs in secondary schools in Canada, they found that approximately half of the 181

students surveyed “recommended that tighter external restrictions were necessary to reduce distracting behaviors” (p. 989). The results also suggested that to help decrease distractions teachers needed to develop meaningful mobile device integration into teaching and learning (Kay et al., 2017, p. 989).

Technology policies in southeast Michigan schools. A search of technology policies from school districts located in southeast Michigan was conducted by the researcher to determine the prevalence of BYOD programs and/or policies in these schools. Of the 47 districts reviewed, 12 or approximately 25% of the districts were found to have a BYOD program in place. Of those 12 districts, three had a formal policy utilizing the term Bring Your Own Device. Two had formal documents that were administrative guidelines but did not have a formal school board adopted policy. One of the districts had a BYOD commitment form which referenced their acceptable use policy. In the remaining six districts, the acceptable use policies that were already in place were referenced as the primary policy source for guiding their BYOD program. However, almost all the districts reviewed, including the ones that offered a BYOD program, had a separate policy in place that dictated use of electronic communication devices, personal communication devices, cell phones, or mobile devices. In 55% of these districts, very similar phrasing in their electronic communication device or similarly named policy was used to describe the allowable use of these devices. Furthermore, 51% of the districts reviewed also had very similar wording for their entire acceptable use policy (Appendix E). This was not surprising, as many school districts throughout Michigan use the school policy formation organization, Neola, to draft their policy language on almost all their school board policies (Taproot Agency, 2017).

Neola provides board policy services to over 1,300 school districts, most of which are in Michigan, Ohio, Wisconsin, Indiana, West Virginia, and Florida (Taproot Agency, 2017). Although not all the districts reviewed utilized Neola, the language found in these policies were quite similar in nature. The primary theme of the personal communication device or similarly named policies was to identify restrictions on the use of these devices in school, on school property, or on school buses. However, many of these same policies had similar language that some districts are using as leverage to implement de facto BYOD programs in their schools: "Use of PCDs [personal communication devices], except those approved by a teacher or administrator, at any other time is prohibited and they must be powered completely off (i.e., not just placed into vibrate or silent mode) and stored out of sight (Clarkston Community Schools, 2013). The key phrase in this sentence is "except those approved by a teacher or administrator." This line provides schools the ability to allow students to use devices for educational purposes in the classroom, thus permitting BYOD programs without writing new board policy. However, since the intent of these electronic communication device policies, when written, was primarily to outline ways in which the use of devices was forbidden, these policies may not provide sufficient guidance and recommendations for how BYOD should be implemented, what professional development requirements teachers need to be prepared to integrate BYOD, best practices for integration of device use in the classroom, or how to address social media use. Furthermore, these policies do not reference current research on BYOD programs and policies.

Phenomenological Research

Phenomenology is a qualitative research method. According to Creswell (2012), in qualitative research the "researcher seeks a deep understanding of the views of one group or single individuals" (p. 128). Further, this type of research attempts to explore a "central phenomenon" that might represent a concept, idea, or process. Phenomenology, specifically, looks to capture the lived experiences of individuals around a central phenomenon to try to better understand the meaning of the phenomenon. A phenomenological study, as defined by Creswell (2013), "describes the common meaning for several individuals of their lived experiences of a concept or phenomenon…The basic purpose of phenomenology is to reduce individual experiences with a phenomenon to a description of the universal essence" (p. 76).

Phenomenology has its roots in philosophy. "Phenomenology is first and foremost, an evolving philosophical stance or approach. Importantly, it is not one approach but many" (Hopkins, Regehr, & Pratt, 2017, p. 21). Phenomenology has been heavily influenced by many philosophers, including Descartes, Kant, Hegel, and Nietzsche. However, it was the work of philosophers Edmund Husserl, Martin Heidegger, and to some extent Edith Stein and Max Scheler in the early twentieth century that phenomenology had its origin (van Manen, 2014). Each of these philosophers brought a unique perspective to phenomenology and a phenomenological approach to research; however, a commonality shared is that the purpose of their work is to "try to understand what concepts or phenomena mean by investigating people's experiences of them" (Hopkins et al., 2017, p. 21). Furthermore, when discussing the idea of meaning from the perspective of phenomenology, it "can be described as the significance

something holds for us: how we have come to understand something as a result of our enculturation and experiences" (Hopkins et al., 2017, p. 21).

Phenomenology is an appropriate research method for studies in education because often there is no one universal truth when it comes to issues in education. When thinking about students, teachers, administrators, and other individuals involved in education each person can approach a situation with a unique perspective.

> Each perspective is "correct," representing a different vantage point for seeing and experiencing educational practices…dealing with educational issues more appropriately involves understanding the perspectives of individuals engaged in the education process rather than searching for the "right" way to do it. (Hopkins et al., 2017, p. 20)

One consideration for researchers contemplating the use of a phenomenological method to research a problem is whether or not "it would be important to understand these common experiences [of individuals] in order to develop practices or policies" (Creswell, 2013, p. 81) as an outcome of the research. Once the researcher has determined that phenomenology is the right approach for a study, data are primarily gathered by conducting in-depth interviews with those persons who have experienced the phenomenon (Creswell, 2013). When conducting in-depth interviews, Creswell (2013) suggests that phenomenological studies should focus on two overarching questions:

1. What have you experienced in terms of the phenomenon?
2. What contexts or situations have typically influenced or affected your experiences of the phenomenon? (p. 81).

Although other open-ended questions are acceptable, these two questions help to ensure that the attention of the interview is focused on gathering data to help "provide an understanding of the common experiences of the participants" (Creswell, 2013, p. 81).

Purpose Statement

The purpose of this study is to investigate the lived experiences of school teachers and administrators in secondary schools in Michigan who have implemented BYOD programs in their school that include the use of PCD and social media applications to gain understanding of the impact of BYOD policies on their experience.

Research Questions

The following research questions will guide the study:

1. What experiences do secondary public school teachers and administrators in Michigan have regarding the implementation of bring your own device programs that include the use of personal communication devices and social media applications?
2. How does current school policy around BYOD, personal communication devices, and social media influence secondary public school teachers and administrators' implementation experiences?
3. What are the common experiences identified by secondary public school teachers and administrators' around the implementation of BYOD that may influence school policy?

Summary

The use of mobile device technology by students in K-12 schools has steadily increased since the beginning of the 20th century (Johnson et al., 2015). Based on a

review of the literature, it appears that since 2010, there has also been a significant increase in the number of schools implementing BYOD programs that allow students to utilize their own personal devices as educational tools.

Cell phones and smartphones are the most popular type of mobile device that students bring to the classroom (Lenhart, 2015). Although a review of research in the literature has shown that use of these devices as part of a BYOD program has some benefits, it has also shown that the use of devices can be problematic. A major concern identified in many of the studies is the need for clear, up-to-date policies that address BYOD programs including the use of smartphones and social media within those programs.

In a review of public school board policies in southeast Michigan it was found that most schools did not have updated, singular policies to address the quickly changing learning environment that embraces BYOD. Instead of developing one clear policy for acceptable use of these devices in the new education paradigm, based on the policy review conducted of southeast Michigan school districts, it seems that school districts have attempted to retrofit or revise multiple technology policies that were not originally designed to be supportive of the use of personal mobile technology devices as learning tools in schools. In many cases, school districts' acceptable use policy and personal communication device policy that were reviewed contradicted or were not in alignment with each other.

A review of the literature has indicated that although many schools have implemented BYOD programs, much is yet to be learned regarding how those experiences could influence policy and program decisions. Conducting research about the

lived experiences of teachers and administrators who have already implemented BYOD in their schools may provide valuable insight on current policy strengths and weaknesses as well as provide suggestions for future policy considerations. Phenomenology is a qualitative research method that seeks to gather the lived experiences of participants around a central phenomenon to identify commonality in their experience. As Creswell (2013) suggested, understanding the common experience of individuals can help to develop policy and practice. In this instance, that method may help to inform current and future policy around bring your own device programs in public schools in Michigan.

Chapter 3: Methodology

Introduction

This chapter outlines the methodology that was used to conduct a phenomenological study of the lived experiences of secondary school teachers and administrators who have implemented BYOD programs that include the use of personal communication devices and social media applications in their school. This chapter discusses the process that was used to identify and select participants for the study, procedures for conducting the study, the design of an interview guide that was used to conduct in-depth interviews, and how the data was collected and analyzed. This chapter concludes with a short discussion about the limitations of the study.

Overview of a Phenomenological Study

A phenomenological study has several defining aspects. The first aspect of this type of qualitative study is the idea that the focus of the study is on exploring a single phenomenon, "phrased in the terms of a single concept or idea" (Creswell, 2013, p. 78). The researcher, in studying the phenomenon, is focused on truly understanding the authentic experiences of participants, including their feelings about the experience and what the experience means to them (Moustakas, 1994). Further, "because individuals may attribute different meanings to these phenomena, subjectivity of individuals' comments or perception underlie phenomenological studies" (Himmetoğlu, Ayduğ, & Bayrak, 2017, p. 48). In this study, the phenomenon being studied is BYOD program implementation in schools and the role of school policy relating to that implementation.

The second key aspect of a phenomenological study is that the researcher explores the given phenomenon with a set of individuals who have all experienced the

phenomenon to some extent. According to Creswell (2013) this group of individuals can range anywhere between 3 and 15 heterogeneous people. This study focused on the experiences of secondary school teachers and administrators who had experience with the identified phenomenon of bring your own device program implementation in their school.

Another important aspect that needs to be considered when implementing a phenomenological research design is the concept of bracketing. This concept suggests that researchers must "set aside their experiences, as much as possible, to take a fresh perspective toward the phenomenon under examination" (Creswell, 2013, p. 80). Edmund Husserl, one of the founding philosophers of phenomenology, suggested that researchers studying the true essence of a person's experience must set aside all their pre-understandings around the phenomenon. Husserl further explained that when conducting scientific investigation, we must "exclude all empirical interpretations and existential affirmations" (Moustakas, 1994, p. 84). Husserl referred to the "freedom from suppositions the *Epoche*, a Greek word meaning to stay away from or abstain" (Moustakas, 1994, p. 85). Husserl was originally a mathematician, so he coined the idea of setting aside pre-understandings as "bracketing." Essentially, "the investigator's pre-understandings are 'bracketed,' or put aside, as in a mathematical equation, so as to not influence how people's experience is interpreted" (Hopkins et al., 2017, p. 22). Another term used to refer to this concept of bracketing in phenomenological research is "reduction." In other words, researchers "reduce" their focus to the phenomenon being studied and eliminating their own experiences from consideration (Hopkins et al., 2017).

Martin Heidegger, a phenomenological philosopher counterpart to Husserl, suggested that bracketing or reduction should not be the approach when conducting these

types of studies because “the researchers’ previous knowledge and assumptions help them better understand the phenomenon under study…from his perspective, a researcher’s subjectivity is not an undesired state…rather than eliminating it, researcher subjectivity should be managed with reflexivity” (as cited in Hopkins et al., 2017, p. 22-23.) In other words, researchers should be aware of their preconceptions at the start of their research. One suggestion is to keep a reflexive journal in which the researcher explores his or her preconceptions throughout the research process (Tufford & Newman, 2012). Finlay (2008) suggests that the researcher conducts a dance between reduction and reflexivity; essentially shifting throughout the study between examining and setting aside one’s own preconceptions with considering one’s own experiences that are brought to the research study.

Other aspects of a phenomenological study that will be explored further in describing the methods for this study include data collection procedures that involve in-depth interviews of persons who have experienced the phenomenon, data analysis that attempts to summarize both the “what” and the “how” of the participants’ experiences, and a final summary that identifies the “essence” of the phenomenon. “The ‘essence’ is the culminating aspect of a phenomenological study” (Creswell, 2013, p. 79).

Participants

Participants for this study were selected based on their direct experience with the implementation of a BYOD program in their school. Participants were both classroom teachers and school administrators, as each brought a unique perspective to the phenomenon. One important role of a teacher is to provide instruction that guides students through the learning process. They are also responsible for classroom

management and classroom discipline. School administrators are responsible for providing instructional leadership and guidance to the instructional staff of their school. They are also responsible for overseeing the implementation of programs, teacher evaluation, and student discipline. Each of these two groups of school educators have different perspectives of their experience with the phenomenon, given that they have different responsibilities in the school setting.

Target Population. For the purposes of this study, teachers and school-level administrators who work in secondary public schools in Michigan were identified to participate in the study. Teachers selected to be part of this study needed to have experience with the implementation of BYOD programs, the use of personal communication devices, and social media applications used by students within the classroom. The International Society for Technology in Education (ISTE) sets forth a set of standards for use of technology and digital tools as part of an instructional program. One key standard that is expected of teachers and that directly relates to the purpose of this study is Standard 4 - Promote and model digital citizenship and responsibility, in which teachers are expected to "Promote and model digital etiquette and responsible social interactions related to the use of technology and information" (International Society for Technology in Education, 2008, p. 1). Teachers involved in implementing BYOD programs and utilizing technology and digital tools in the classroom should have first-hand knowledge of policy considerations that may be needed to guide student use of these devices and tools in the classroom.

School administrators selected to be part of this study needed to have direct experience with the implementation of a BYOD program in their school. School

administrators serve as the instructional leaders of the school and have knowledge of programs being implemented within the schools they lead to ensure alignment between curriculum, assessment, and instruction (Lunenburg, 2013). ISTE suggests that school administrators should support a digital age culture in which they "model and promote the frequent and effective use of technology for learning" (International Society for Technology in Education, 2009, p. 1). School administrators are also responsible for ensuring that they "promote, model, and establish policies for safe, legal, and ethical use of digital information and technology" (International Society for Technology in Education, 2009, p. 2). Supporting and monitoring appropriate use of technology and digital citizenship ensures that the school is a safe and supportive place for students. As outlined in the Professional Standards for Educational Leaders, "students learn when educational leaders foster safe, caring, and supportive school learning communities and promote rigorous curricula, instructional and assessment systems" (National Policy Board for Educational Administration, 2015, p. 4). As key school policy enforcers, school administrators should be able to offer insights into their experiences with the implementation of BYOD programs in their school that could lead to policy considerations for BYOD programs, personal communication devices, and social media applications.

Sample. To identify participants who met the criteria, participants were identified through purposeful sampling methods. Purposeful sampling is utilized when the researcher "intentionally selects individuals" to participate in a study (Creswell, 2012). Since the purpose of the study was to develop a common understanding of lived experiences with a given phenomenon, two school districts that have implemented

BYOD in Michigan were identified as the focus of identifying participants of the study. School-level administrators and teachers working in those districts identified as having implemented BYOD programs were initially contacted by email and phone to help identify eligibility and interest in participation of the study. All school administrators and teachers who met the basic requirements for consideration to be in the study were provided a letter with a detailed description of the study and a letter of informed consent.

Purposeful sampling is one type of sampling method that was utilized in this study to help identify school-level participants. Purposeful sampling occurs when a "researcher intentionally select individuals and sites to learn or understand the central phenomenon" (Creswell, 2012, p. 206). District- and school-level administrators at the two districts identified were asked to help identify school-level personnel, including administrators and teachers, in their districts who might be eligible and interested in participating. Administrators were instructed to advise any potential participants that a teacher's choice to participate in the study was completely optional and voluntary. Administrators were instructed not to pressure any other persons into feeling as if they should or need to participate. Any potential school-level participants identified by these sources received a letter, via email, with a detailed description of the study topics, and a letter of informed consent to be returned to the researcher. All participants chosen to for this study were based on the individual's willingness to volunteer and be interviewed. No participant names were used as part of the study. The following demographic features of all participants was included in the study: gender, position, years of experience in current position, grade levels of students served, and

years of experience implementing BYOD. Additionally, for administrators interviewed, information on areas of responsibility was collected, while for teachers, information on subjects taught was collected.

Number of Participants. There is no single recommended number of participants who should be included in a phenomenological study. Creswell (2013) suggests that panel size can range between 3 and 15 participants. The process of collecting and analyzing qualitative data is time-consuming and needs to be manageable for the researcher. The "overall ability of a researcher to provide an in-depth picture diminishes with the addition of each new individual or site" (Creswell, 2012, p. 209). Saturation in research reflects the concept that, at the point the researcher believes "new data will not provide any new information or insights" (Creswell, 2012, p. 433), saturation has been reached. A study by Hennink, Kaiser, and Marconi (2017) indicated that code saturation occurred after nine interviews. This means that after nine interviews, the researcher has "heard it all" (p. 1), and researchers will not learn anything new after this point.

Three recent educational technology studies that specifically utilized phenomenological study design were also examined to help provide guidance in selecting the appropriate number of participants for this study. Of these three studies, one had eight participants (Session, 2014), one had 10 (Gurvich, 2018), and one had 12 participants (Andrews, 2017). This study aimed to have 12 participants, with 6 participants from each of the two school districts identified in the study.

Selection of Participants. The aim was to include participants who had experience related to the phenomenon being studied (i.e., BYOD programs, personal

communication devices, and social media applications). Participants for the study were identified through recommendations from district and/or school level administrators. Six participants (2 administrators and 4 teachers) from each of the two schools selected received an invitation to participate along with a letter of informed consent. All 12 selected participants returned the letter of informed consent, and interviews were scheduled at their respective sites at an agreed-upon date and time.

Setting

The setting for this study was two public school districts in Michigan. Each school district was selected because it had had a BYOD program in place for at least 2 years. The first school district selected, District A, is in a suburban community of southeastern Michigan. As of 2018, the school district has one high school with an enrollment of approximately 1750 students. Michigan School Data (Michigan Department of Education, 2019) indicates the following demographics for the students attending school in the district:

1. Ethnicity: 72% white, 10.2 % African American, 9.8 % Asian, 8% other
2. 12.65% of students are identified as economically disadvantaged
3. 12% are identified as receiving special education services
4. 4% are identified as English language learners

As of 2016, the average household income of the citizens living in the city in which the school district is located was $174,281 (Towncharts.com, 2019).

District B is also in a suburban community in southeastern Michigan. As of 2018, District B has three comprehensive high schools with a total enrollment of 5100 students.

Michigan School Data (Michigan Department of Education, 2019) indicates the following demographics for the students attending school in the district:

1. Ethnicity: 76% white, 9% African-American, 6% Asian, 9% other
2. 26% of students are identified as economically disadvantaged
3. 12.5% are identified as receiving special education services
4. 9.4% are identified as English language learners

The three high schools in this district are located in two different cities. The average annual household income of citizens living in these cities, as of 2016, was $56,593 (Towncharts.com, 2019).

Although the two districts have similar demographics in terms of ethnicity and special education services; there are significant differences in other categories. District A has a much higher average household income level as compared to District B. As a result of differences in income level, District B has a higher number of students identified as economically disadvantaged. District B also has a higher number of students identified as English language learners.

School district administrators for each of the two sites were contacted regarding participation in this study to obtain formal approval. School district administrators for both sites provided approval for participation in the study and these approval letters were submitted to the NSU Institutional Review Board as part of the IRB approval process.

Instruments

Phenomenological studies are primarily conducted through in-depth interviews to collect data. According to van Manen (2014), the phenomenological interview “serves the very specific purpose of exploring and gathering experiential narrative material,

stories, or anecdotes that my serve as a resource for phenomenological reflection and thus develop a richer and deeper understanding of human phenomenon" (p. 314). According to Moustakas (1994), the "phenomenological interview involves an informal, interactive process and utilizes open-ended comments and questions" (p. 114). He further explains that the interviewer should strive to create a trusting and relaxing atmosphere prior to beginning the interview process. Moustakas (1994) emphasizes that the "interviewer is responsible for creating a climate in which the research participant will feel comfortable and will respond honestly and comprehensively" (p. 114).

To help create an ideal interview situation, van Manen (2014) suggests that the researcher consider the following questions to guide the process:

1. Where? – Informal settings may be better than formal ones to help person feel more comfortable telling their story.
2. Who? – The researcher should be someone who can make personal connections with the interviewees to help gain their trust and again ensure they are comfortable telling their story.
3. When? – Strive to create an interview situation in which the interviewee does not feel rushed. "Conversations require the right kind of atmosphere and tone" (p. 315).
4. Why? – Remember to keep the focus of the interview on the phenomenon and strive to create a sense of wonder around that phenomenon.
5. How? – Use means to record the interview.
6. What? – Always keep the research question in the back of your mind as the researcher. "The aim of the interview conversations for phenomenological

inquiry is first to gain experiential material that is rich and detailed. As we interview others about their experience of a certain phenomenon, it is imperative to stay close to experience as lived" (p. 316).

7. Whatever? – "Whatever happens, do not be afraid of silences" (p. 316). If silences occur, van Manen suggests using techniques such as repeating the last comment or thought from the interviewer or asking the interviewee questions that help provide concrete examples of the experience.

Brinkman & Kvale (2015) summarize that the phenomenological interview is an interview process that "comes close to an everyday conversation, but as a professional interview it has a purpose and involves a specific approach and technique; it is semistructured—it is neither an open everyday conversation nor a closed questionnaire" (p. 31).

For this study, to help guide the interview process an Interview Protocol was created (Appendix C) keeping the recommendations of both van Manen (2014), Moustakas (1994) in mind. The Interview Protocol requested the following demographic information: gender, position, years of experience in current position, areas of responsibility--administrators, subject(s) they teach--teachers, grade levels of students they serve, and years of experience implementing BYOD. Then the interview protocol asked questions focused on getting at understanding how the interviewee experienced the phenomenon being investigated. In addition, other types of questions that were used throughout the interview process were: (a) follow-up questions, (b) probing questions, and (c) specifying questions (Brinkman & Kvale, 2015). Follow-up questions can be created by "direct questioning of what has just been said" or by

"repeating significant words of an answer" (Brinkman & Kvale, 2015, p. 161). Probing questions are those in which the interviewer further "pursues the answers, probing their content, but without stating what dimensions are to be taken into account" (Brinkman & Kvale, 2015, p. 161). Finally, specifying questions are those in which the interviewer is trying to get the interviewee to provide a more "precise description" of what they are communicating in their response (Brinkman & Kvale, 2015).

The Interview Protocol was reviewed by two experts in the field of educational technology and BYOD programs to check for content validity prior to its use. The first expert, a district director of technology, felt that all questions were well written, but suggested adding a question regarding the connection between the BYOD program implementation and student learning. The second expert, a district coordinator of instructional technology, suggested that an explanation be provided to those being interviewed to clarify what is meant by BYOD. The second expert felt that some educators may not that realize that allowing the use of mobile phones in school would be considered part of BYOD implementation. Adjustments to the interview protocol based on both experts' feedback were made. (Appendix C)

Procedures

According to Sohn, Thomas, Greenberg, & Pollio (2017) "researchers should conduct at least one pilot interview prior to collecting data" (p. 133), especially for "researchers new to these procedures" (p.133). The pilot interview will help with determining if any additional changes should be made to the protocol as well as provide

the interviewer experience with note-taking methods and use of the tools utilized to record and transcribe the interview.

A pilot interview was conducted with a high school teacher who has implemented BYOD in her school and classroom to test the interview protocol and the use of data collecton tools. The pilot interview helped identify needed changes in the interview protocol: changing of wording, clarification of terms, and follow-up questioning. Conducting the pilot interview also helped to identify changes needed to the format of the Field Notes Form (Appendix D) to allow for more ease in notetaking throughout the interview.

The researcher contacted two school districts identified as having BYOD programs in place for at least two years and requested their preliminary permission for staff to participate in the research study. Once official IRB approval was received, participants at those schools were solicited through the means previously identified: (a) contact district-level administrators and obtain recommendations for participants, and (b) contacted building-level administrators and obtained recommendations for participants. Participants were provided a letter explaining the purpose of the study and were asked to complete and return a letter of informed consent form. Upon receipt of the informed consent form, an interview was scheduled with the participant.

Participants were contacted via email and/or phone to set up the interview. Interviews in phenomenological studies should typically last 45-60 minutes (Sohn et al., 2017). Each interview for this study was scheduled for a 60-minute time frame. Since the pilot interview was completed within 35 minutes, A 60-minute time frame allowed enough time for the interviewer and participant to get to know one another, have time to

discuss background information on the study, and to ensure the interviewee had the time necessary to tell his or her story without feeling rushed.

The researcher met the participant at the participant's school at the agreed upon date and time. This time included before- and after-school hours, and during prep hours. A secure office in each school for to conduct the interviews was coordinated prior to the interview to ensure the privacy of each participant and avoid interruptions. Prior to the start of the interview, the researcher made a bit of small talk and engaged in social interactions designed to help the participant feel comfortable and build trust. The researcher explained the purpose of the study and then began the interview process utilizing the Interview Protocol and recorded the interview. Most interviews were completed within 45 minutes.

Once interviews were concluded, the researcher transcribed notes and began the data review and analysis process as soon as possible after the conclusion of the interview.

Data Collection and Handling

Multiple methods were utilized during each semi-structured interview to collect data. Each participant was assigned a unique code. No names of participants were recorded at any point during the data collection process.

Interviews. Interviews were conducted face-to-face. The iOS application, Dragon Dictation, was utilized on an Apple iPhone or iPad as one tool for data collection. Dragon Dictation is a text-to-speech application that immediately converts what is being said to text. This provides an immediate written transcription of the interview; however, the application does not collect any actual audio data. It is important to note that most text-to-speech applications cannot be relied upon to be 100% accurate. Therefore, to ensure the

content from the interview was fully captured, all interviews were also recorded utilizing the computer audio recording software Garage Band. An external microphone was connected to the computer to help enhance the quality of the audio recording captured. The written transcription was compared against the audio recording for accuracy and corrections. The written transcriptions and audio recordings were saved with a code name on a password-protected computer, in file folder that was also password protected.

Field notes. Field notes are another data collection tool useful when conducting a semi-structured interview in a phenomenological study. Field notes are used to record what "the researcher hears, sees, experiences and thinks in the course of collecting and reflecting on the process" (Groenewald, 2004, p. 13). Capturing reflections and thoughts of the researcher at the time of the interview is important, because "the human mind tends to forget quickly" (Groenewald, 2004, p. 14) and trying to recapture and remember later could prove to be challenging. The following types of notes were utilized as part of the data collection process as described by Groenewald (2004):

1. Theoretical Notes (TN): "Attempts to derive meaning" as the researcher thinks or reflects on experiences.
2. Methodological Notes (MN): "Reminders, instructions or critique" to oneself on the interview process.
3. Analytical Memos (AM): End-of-a-field-day summary or progress reviews (p. 15)

Handwritten field notes of each of the types identified above were collected during each interview utilizing a prepared field note form (Appendix D).

Data Analysis

A phenomenological approach was used as a basis for organization and analysis of interview data collected. Three core concepts from phenomenology—epoche, phenomenological reduction, and imaginative variation, along with guidance from Creswell (2012) were employed to guide the analysis. Creswell (2012) suggests the following steps to analyze and interpret qualitative data: 1) data collection, 2) data preparation for analysis, 3) researcher reads data to get a general sense, 4) researcher codes the data, 5) researcher codes text to create descriptions for research report, and 6) researcher codes the text for themes to be included in the research report. In considering steps 1 and 2, data collection and preparation for analysis, epoche is the first core phenomenological concept to be employed.

Epoche. Prior to gathering and analysis of data it is very important in a phenomenological study that the researcher pay close attention to the concept of epoche. Epoche is the process in which "we set aside our prejudgments, biases, and preconceived ideas about things" (Moustakas, 1994, p. 85). Prior to data collection and conducting interviews, Moustakas (1994) emphasizes the importance of the researcher to "review current thoughts and feelings regarding the person, situation, or issue" (p. 89) in order to be able to consciously set aside any biases and prejudgments. During the process of collecting interview data, employing epoche "requires unusual, sustained attentive, concentration, and presence" (Moustakas, 1994, p. 88) on the part of the researcher.

Transcendental Phenomenological Reduction. Transcendental phenomenological reduction is defined as "the methodological step that leads us to attend to the structure of acts that directs them at their objects, rather than the object itself"

(Kaufer & Chemero, 2015, p. 49). The process of transcendental phenomenological reduction aligns with Creswell's (2012) suggested steps 3-5 in the qualitative analysis process: reading data to get a general sense, coding the data, and coding text to create descriptions. The goal of transcendental phenomenological reduction "is the construction of a complete textural description of the experience" (Moustakas, 1994, p. 96). "Horizonalizing" is key step in this process. When practicing horizonalizing,

> Every statement initially is treated as having equal value. Later, statements irrelevant to the topic and question as well as those that are repetitive or overlapping are deleted, leaving only the *Horizons* (the textural meanings and invariant constituents of the phenomenon). (Moustakas, 1994, p. 97)

Regarding reading the data, van Manen (2014) also provides guidance on how to approach the text phenomenologically from three levels. A) Wholistic reading approach "attend to the text as a whole and ask, 'How can the eidetic, originary, or phenomenological meaning or main significance of the text as a whole be captured?'" (p. 320). B) Selective reading approach—read through the text several times and identify statements that "seem particularly essential or revealing about the phenomenon or experience being described" (p. 320). Themes should begin to emerge and be identified with codes. C) Detailed reading approach—the researcher attempts to look even closer at individual sentences and ask, "What may this sentence or sentence cluster be seen to reveal about the phenomenon or experience being described?" (p. 320). The researcher continues to try to identify themes and create codes. Content identified as having significance towards the phenomenon found through the selective reading and detailed reading analyses approaches may also serve as anecdotes in the research report.

Imaginative Variation. Imaginative variation is the final phenomenological concept utilized in the data analysis approach to this study that most aligns with Creswell's (2012) step 6 in the qualitative data analysis process: coding the text for themes. Moustakas (1994) explains that the purpose of imaginative variation "is to arrive at structural descriptions of an experience, the underlying and precipitating factors that account for what is being experienced…how did the experience of the phenomenon come to be what it is?" (p. 98). Moustakas (1994) goes on to explain that

> Through Imaginative Variation the researcher understands that there is not a single inroad to the truth, but that countless possibilities emerge that are intimately connected with the essences and meanings of an experience. The steps of Imaginative Variation include:
>
> 1. Systematic varying of the possible structural meanings that underlie the textural meanings;
> 2. Recognizing the underlying themes or contexts that account for the emergence of phenomenon;
> 3. Considering the universal structures that precipitate feelings and thoughts with reference to the phenomenon, such as the structure of time, space, bodily concerns, materiality, causality, relation to self, or relation to others;
> 4. Searching for exemplifications that vividly illustrate the invariant structural themes and facilitate development of a structural description of the phenomenon. (p. 99)

Creswell (2012) provides guidance on how to analyze qualitative text and code data that helps to actualize Moustakas' (1994) process for imaginative variation and builds upon the guidance offered by van Manen (2014). This guidance helps to reduce the text from many pages into coded themes. First, read through the text and then divide the text into "segments of information" (p. 244). Next, label these segments with codes, approximately 30–40 initially. Reduce codes to approximately 20 by finding redundancy and overlap. Finally, "reduce the list of codes to get five to seven themes" (p. 245). The *Coding Manual for Qualitative Researchers* (3rd ed.), by Saldana (2016) served as a guide during the coding process in this study. Once themes were identified and recognized, they were used to create the structural description of the phenomenon as explained by Moustakas (1994).

Summary

Chapter three presented a summary of the methodology for conducting phenomenological qualitative research. This study aimed to collect the lived experiences of educators in the implementation of BYOD programs that include the use of personal communication devices and social media applications. These experiences may be utilized to inform policy and program considerations for the use of technology in schools related to BYOD implementation and may even help to guide the design of a model policy on the same topic.

The phenomenological research method focused on collecting first-person accounts of life experiences around a phenomenon. In order to do this, the researcher, employed, epoche—"to set aside prejudgments, biases, and preconceived ideas about

things" (Moustakas, 1994, p. 85). This was especially important as interviews were conducted, to focus on the experiences of the participants without any presuppositions.

A pilot interview was conducted to help ensure the quality of the Interview Protocol (Appendix C) and the Field Notes Form (Appendix D). This provided the researcher experience with the interview process and testing of the technology to be used for recording and transcribing. School districts in Michigan that have had a BYOD program place for at least 2 years were contacted to gain permission for their staff to participate in the study. Twelve participants (6 from each school), including teachers and school-level administrators were identified utilizing purposeful sampling methods.

Interviews were scheduled with participants who returned the informed consent form to take place at an agreed time and location. Interviews were allotted 60 minutes. As soon as possible after the conclusion of each interview, transcripts and audio-recordings were reviewed for accuracy. The data analysis approach was based on the phenomenological research methods that include epoche, transcendental phenomenological reduction, and imaginative variation. The initial process for data analysis also utilized a holistic text approach to gather and record initial impressions. After all data was collected, text was coded to identify themes around the phenomenon being studied.

Chapter 3 provided an overview of the methodology that was used for this phenomenological study. The methods resulted in gathering valuable information around the lived experiences of educators who have implemented BYOD programs. This study's findings may provide schools looking to leverage BYOD programs in their schools, recommendations for successful BYOD implementation. Additionally, these experiences

may offer future considerations for BYOD school policy. Chapter 4 will provide an overview of the participants and sites of the study as well as the results of the data analysis.

Chapter 4: Results

Introduction

Chapter 4 presents the findings of a phenomenological study of public high school teachers and administrators who have implemented a Bring Your Own Device program in their school. A phenomenological design was selected because it provided a method to best answer the research questions. In this chapter, the following topics are presented: (a) description of each site, (b) participants' demographic information, (c) presentation of findings related to each research question, and (d) summary of key findings.

After receiving IRB approval, the study was initiated. A personal email invitation along with consent form was sent to teachers and administrators at each of two sites in which the research took place. After 3 weeks, 2 administrators and 4 teachers at each of the sites (12 participants total) indicated interest in participating in the study and provided a signed consent form. Purposive sampling was used to select individuals to participate in the study. Participants had to have at least 2 years of experience implementing a BYOD program in their high school. Interviews were scheduled and conducted with the identified participants who had qualified as having experienced the required phenomenon.

Interviews took place at each site in which the staff member worked. A private room was secured, and the interview took place at an agreed upon time. Interviews were between 30 and 45 minutes in length depending on the depth of answers given by the participant. The computer program Garage Band was used to record the interviews and the software program Dragon Dictation was used to create a transcription. Field notes were also collected while each interview was conducted. Each recorded interview and

draft transcription were stored to a password-protected computer hard drive. After completion of the interviews, the recordings were transcribed. The draft transcription created by Dragon Dictation served as a starting point for the transcription process, and then was edited to accurately match each recorded interview. To ensure anonymity for all participants, a coding system was created, and each participant was assigned a unique identifier. The coding system followed the method of S1 = Site 1, A1 = Administrator one, T1 = Teacher one, etc. Therefore S1A1 = interview at site 1 of administrator 1. S1A2 = interview at site 1 of administrator 2. S1T1 = interview at site 1 of teacher 1. S2A1 = interview at site 2 of administrator 1. A total of 12 unique codes were created to represent each of the 12 participants.

Transcriptions were organized on an Excel spreadsheet by each question asked. Then each transcript was read as a holistic document noting the general tone of the interview as it related to BYOD implementation as positive, negative, or neutral. Field notes were consulted and reviewed as well. Initial thoughts about the text as a whole and reflections from field notes were recorded. The selective reading approach was then used to record essential information, quotes, and key words and phrases for each interview question. Finally, coding methods of in vivo coding and values coding were used to further analyze the data and examine themes that emerged. Saldana (2016) emphasizes that multiple coding methods can be used to explore phenomena in a study. He identifies in vivo coding as a type of coding best for "beginning qualitative researchers" and for "studies that prioritize and honor the participant's voice" (p. 106). Saldana describes values coding as a method that is "appropriate for virtually all qualitative studies, but particularly for those that explore…intrapersonal and interpersonal experiences and

actions in case studies." (p. 132). Both of these types of coding support the phenomenological study approach of analyzing participants' lived experiences. Once the coding was completed and themes began to emerge; the themes were reviewed, analyzed, and organized according to each research question they were associated with. The purpose of the study was to investigate the lived experiences of public school teachers and administrators in secondary schools located in Michigan who have implemented BYOD programs in their school that include the use of personal communication devices and social media applications to gain understanding of the impact of BYOD policies on their experience. The following three research questions guided the study:

1. What experiences do secondary public school teachers and administrators in Michigan have regarding the implementation of bring your own device programs that include the use of personal communication devices and social media applications?
2. How does current school policy around BYOD, personal communication devices, and social media influence secondary public school teachers and administrators' implementation experiences?
3. What are the common experiences identified by secondary public school teachers and administrators' around the implementation of BYOD that may influence school policy?

The Sites

Site 1 is a public high school serving grades 9-12 and is located in District A, a suburban community of southeast Michigan. The enrollment of the school is approximately 1750 students served by approximately 100 teachers and four

administrators. The school building is 7 years old. The design plan and vision of the school was to incorporate mobile technology and a bring your own device program as part of the building model when it first opened; therefore, a bring your own device program has been in place since the school opened.

Site 2 is a public high school serving grades 9-12 and is also located in a suburban community of southeast Michigan. The enrollment of the school is approximately 1,650 students served by approximately 77 teachers and 4 administrators. The school was built in 1957 and has had multiple renovations. The most recent renovations took place in 1992 and 2000. The bring your own device program evolved from a laptop program that was initially implemented at the district's middle schools around 2002 (C. Roden, personal communication, March 21, 2020). Over a period of time, the bring your own device program was informally adopted at site 2 and has transformed in the last 3 to 4 years into a policy that allows students to bring and utilize any type of personal communication device of their choosing.

The Participants

Site 1. Participant S1A1 is a male high school principal with 19 years of high school administration experience. Key responsibilities that he identified in his role are overseeing a staff of 150 persons, responsibility for instructional programming, oversight of the building budget, and accountability for state reporting and assessment. He has 5 years of experience related to BYOD implementation.

Participant S1A2 is a female high school assistant principal with 4 years of experience in her current role. Key responsibilities that she identified in her role are student discipline for a specific portion of the alphabet, testing, scheduling, specific

curriculum departments, and teacher evaluations. She has 4 years of experience related to BYOD implementation.

Participant S1T1 is a female high school vocal choir music teacher with 14 years of experience as a teacher. She teaches grades 9-12 and has 4 years of experience related to BYOD implementation.

Participant S1T2 is a female English teacher with 9 years of experience as a teacher. She teaches grades 10-12 and has 6 years of experience related to BYOD implementation.

Participant S1T3 is a female media specialist teacher with 10 years of experience as a teacher. She teaches grades 9-12 and has 5 years of experience related to BYOD implementation.

Participant S1T4 is a male social studies teacher with 14 years of experience as a teacher. He teaches grades 10-12 and has 5 years of experience related to BYOD implementation.

Site 2. Participant S2A1 is a male high school principal with 10 years' experience as a high school administrator. He identified that his responsibilities as the building principal are "running all aspects of the school." He has 10 years of experience related to BYOD implementation.

Participant S2A2 is a female high school assistant principal with 5 years of experience in her current role. She identified that her primary responsibilities as a high school administrator include student discipline and evaluations of teachers. She has 2 years of experience related to BYOD implementation.

Participant S2T1 is a female English teacher with 13 years of experience as a teacher. She teaches grades 9-12 and has 13 years of experience related to BYOD implementation.

Participant S2T2 is a male social studies teacher with 19 years of experience as a teacher. He teaches grades 9-12 and has 10 years of experience related to BYOD implementation.

Participant S2T3 is a male English teacher with 12 years of experience as a teacher. He teaches grade 12 and has 5 years of experience related to BYOD implementation.

Participant S2T4 is a male science teacher with 20 years of experience as a teacher. He teaches grade 11and has 18 years of experience related to BYOD implementation.

Presentation of Findings

This portion of Chapter 4 presents data collected from individual participants' interviews and analyses of interviews and field notes. The analysis process used was to start by reviewing all of the data holistically to get a general sense (Creswell, 2012). Next, a selective reading approach was used to find statements that seemed "particularly essential or revealing about the phenomenon or experience being described" (van Manen, 2014, p. 320). After the selective reading approach was employed, two types of coding were used to code the text and create descriptions: in vivo coding and values coding. Saldana (2016) explains that In vivo coding can be used for almost any type of qualitative study but is especially appropriate "for studies that prioritize and honor the participant's voice" (p. 106). In vivo coding captures "terms and concepts drawn from the words of the

participants themselves" (p. 106). Saldana (2016) also suggests that the research should "be prepared and willing to mix and match coding methods" (p. 109). Therefore, the second coding method selected for analysis was values coding. Values coding is appropriate for this study because it is identified as being suited for studies that "explore interpersonal participant experiences and actions" (p. 132). After utilizing these two coding methods to analyze the data, and reexamining all of the data, a set of themes began to emerge.

Participants' experiences with the BYOD program in their school were identified and organized into four categories: (a) positive experiences related to academics and student learning, (b) negative experiences that distract from academics and student learning, (c) experiences connected to the implementation of the BYOD program, and (d) experiences that relate to school policy around BYOD. Next, experiences were reexamined to identify common experiences amongst all of the participants at both sites. Experiences that were identified as being common were tallied for each individual site as well as for both sites in totality. Transcripts were read and reread to ensure all common experiences were identified and totaled. The next section will further describe the results for each of the three guiding research questions. The chapter will conclude by summarizing the key findings and discussing the four themes that emerged from the findings.

Results for Research Question 1

Research Question 1 asked, What experiences do secondary public school teachers and administrators in Michigan have regarding the implementation of bring your own device programs that include the use of personal communication devices and social

media applications? All 12 participants at both sites identified a variety of devices students were using as part of BYOD implementation including laptops, Chromebooks, iPads/tablets, and phones (some used the term cell phones, others used smartphones, and some said phones). Eleven of the 12 participants stated that phones were the most prevalent device that students were using. Subsequently, most of the participants, when interviewed, stated or implied they were primarily referring to the use of phones by students in their experiences. At both sites, positive and negative experiences and attitudes were identified related to BYOD implementation. Four of the six participants at site 1 identified more positive experiences related to BYOD implementation or had a positive attitude, with two being focused more on negative aspects. At site 2, three participants focused more on positive experiences, while two participants were neutral--equally positive and negative, and one having mostly negative experiences. Overall, experiences at site 1 were more positive than at site 2.

Positive experiences. Positive experiences around BYOD implementation discussed by participants focused on how BYOD supported academic needs, student learning, and school activities. A variety of experiences were identified. The most common experiences discussed related to BYOD implementation in the classroom were the use of Google (Suite, Classroom, or Drive), conducting research, engaging in formative assessments, and using social media as communication tools.

The use of Google (Suite, Classroom, or Drive) was mentioned by seven participants located at both sites as a positive use of devices for academic purposes in the classroom. Participant S1A1 explained, “our students have Google accounts…so a lot of that information is being transmitted via their devices, accessing their Google accounts.”

Participant S1A2 stated that “I’ve seen students actually pull up documents from Google Docs to help them out from their cell phones mostly.” Participant S1T2 further detailed the use of Google by students for academic reasons and indicated,

> Using pretty much everything in the Google suite, they do a lot with their Google folders and with Google Docs and sharing documents across a group to work together, organizing things by using a Google folder to share with me as a teacher. We are in Google classroom, so I start every day by having them open up my Google classroom page and checking out what we are doing that day, what the announcements say.

Participant S2T3 explained that, “It has been great. It really has been, because there is now a Google Drive app that is really accessible.” Participant S2T4 also emphasized the positive aspect of Google, explaining, “I use Google Drive for everything. It’s nice and convenient for that aspect, that [students] can be logged into their Google Drive and do things from their phone.”

Using devices to conduct research or look up information was identified by seven different participants located at both sites as another positive example of BYOD implementation in the classroom. Participant S1T4 stated,

> I will see kids, where I will mention something, and right away I will kind of be glancing at screens and I will see kids looking online and researching the thing I just said or looking into the story I just told. I love that, because that allows such a deeper level than me just saying here’s what it is, here is how it happened.

Participant S2A1 cited “when a teacher would allow students to do research,” as a way that, as an administrator, he sees devices being used by students. Participant S2A2

explains, “I have seen students use it for research. To find things online that the teacher asks them to do or what they are doing independently.” Participant S2T1 explained,

> Kids have their devices on them all the time anyway and it seems silly to waste the opportunity to do research, just because they don’t have a laptop cart or access to the computer lab that day. I think that is one of main ways I started implementing it. If the kids didn’t know something, one of you can Google it.”

Participant S2T2 stated, “I have used them [devices] for research purposes. Gives them [students] an opportunity to look up information if they don’t know it.” Participant S2T4 emphasized how being able to look up information is beneficial and stated that “positive experiences are being on task, bringing up teachable moments. For example, an earthquake occurs the other day in Ohio. I will instantly ask the kids ‘find something about that.’ And then we talk about it.”

The third type of activity identified by participants that positively related to BYOD implementation and the use of devices was for conducting formative assessments with students. Six of the participants specifically identified the formative assessment mobile application tool Kahoot, while one additional participant mentioned using devices for brief formative assessments at the end of class periods.

Three of the four administrators interviewed spoke about the use of the application Kahoot by students and teachers. Participant S1A2 noted that, “I have seen teachers engage students with the Kahoot game on the board.” Participant S2A1 explained, “We have Kahoot and other game type formative assessments that they’ll use.” Participant S2A2 also has witnessed the use of Kahoot in the classroom and stated, “Kahoot as a formative assessment. I have seen a couple of times where the teacher will

have a live poll where the students will answer, and the answers will pop up on the screen." Several teachers at both sites also identified the use of devices for formative assessment purposes. Participant S1T1 stated, "When I have specific things that I'm asking them to use with their phones, sometimes we have played Kahoot." Participant S1T2 explained, "Answering a question and then sending it to me as an exit ticket…so they use their phones a lot for that, to send a quick exit ticket at the end of the day." Participant S1T3 also identified the use of Kahoot for formative assessment purposes. He stated "Kahoot, having them use their phones as kind of part of a game system. And that gives you some data that you can see who is answering correctly and who's answering incorrectly. So that can be really beneficial."

The fourth activity that multiple participants identified as positive was the use of social media as a communication tool. The use of social media for communication primarily focused promoting school events and student accomplishments. Additionally, the application most mentioned by participants as being used in a positive way was Twitter. Nine of the participants mentioned the use of Twitter as a way to communicate, while one cited Snapchat. Interestingly, most of the examples of positive social media use primarily indicate how the adults use it, rather than the students. Participant S1A2 explained, "A few of our clubs…they use Twitter...to promote what they are doing." Participant S2A1 stated that "we use Twitter a lot for academic reasons to promote the school, to show what is happening in academics and extracurriculars and the success of our students." Although participant S2A2 did not specifically identify Twitter, she mentioned that "staff members will use it [social media] for communication of events or what is going on or celebrating successes." Participant S1T2 stated,

> I love Twitter…I also really love to share the experiences of my students through my Twitter. I'll tweet a little bit during the day kind of what's going on in classroom or highlight or showing daily life in my class. My students all know at this point when I come around and taking pictures, "oh I'm going to be on Twitter. So exciting." They love it.

Participant S1T4 discussed,

> It [Twitter] is a great way to promote what is going on in the school…There is a group of teachers in the district and we re-tweet each other and we like to post and share and make kids aware of what is going on. It can also be a great way into the classroom. I make a lot of use of Twitter in my classroom. I'll post links to interesting articles that I want my kids to read…Kids will Tweet links to me…I think it [Twitter] can be a really positive way to share information outside of the school day.

Participant S2T1 explained that "I have tried to get into Twitter with them, but it's not my thing…I do encourage them [students] to follow the AP college board [on Twitter]." Participant S2T4 was one participant who specifically discussed the positive use of a social media application other than Twitter. He explained, "They will Snapchat…especially when we do the good old hands-on stuff, the egg drop and all that stuff. They love putting that out there on their stories. They love it. I do know they are constantly wanting to use their phones for that."

Although participants at site 1 were identified as having more overall positive experiences related to BYOD, participants at both site 1 and 2 clearly identified ways in

which BYOD implementation supported academics, student learning, and school experiences.

Negative experiences. In interviews, participants at both sites identified multiple experiences that may be considered negative and that distract from academics and student learning. One area that was overwhelmingly identified by the majority of participants was the use of social media and texting to engage in nonacademic related behavior such as peer mistreatment, academic dishonesty, and sending inappropriate content. Additional experiences that were shared that could be categorized as negative or distracting from the purpose of BYOD were off-task behavior and generally being distracted by devices.

Ten of the 12 participants discussed social media and texting as a behavior that students engaged in with their devices that was nonacademic. The social media application Snapchat was mentioned by nine of the participants as the primary social media application they experienced students using, while the social media application Instagram was mentioned by five participants.

Participant S1A2 explained, “Social media is huge. You will walk past, and students are using their phones to check their Snapchat. Even when I have had to discipline students, it may have had to do with a social media post that we’ve had to kind of review, confiscate the phone to check out.” Participant S1T1 emphasized “For the most part though, kids are head down and on the phone…They are just on their device. They are not talking with anyone. They are text messaging, Snapchatting or checking out Instagram.” Participant S1T2 stated, “Social media is definitely what they’re doing more often than not if they’re not on task.” Participant S1T4 stated “Snapchat, that is really one that is tough. With Instagram, these are instaneous things that some kids, some kids are

addicted to it." Participant S2A1 mentioned "Students will use Snapchat a lot. Students will use Instagram a lot." Participant S2T1 explained "Snapchat has really made it [a student distraction], so I don't want to use the phones at all." Participant S2T3 stated "Snapchat will pop up and it's right there, so they have to scroll it out of the way. But some of them click, and they start engaging in that, and I have to remind them to get back on track."

Participants identified several specific negative behaviors that students engage in while using social media or texting. Bullying or peer mistreatment and taking and/or sending inappropriate videos or photos was mentioned three times by different participants. Participants S1A2 and S2A2 are both assistant principals at their respective sites and both identified discipline as one of their primary responsibilities. They each provided multiple examples of their experiences related to the negative use of devices that also directly relate to them handling discipline as part of their daily responsibilities. Participant S1A2 gave several examples of experiences she has had regarding the types of negative behaviors she has handled with social media use by students. She stated,

> Students are just mean…the girls get into a back and forth with each other through social media…. I've seen students record inappropriately with their cell phones. Maybe a fight, maybe an argument. Maybe even a teacher. I've had a situation…where a student took a picture of a test and distributed it with their cell phone…I had an unfortunate situation where this young man…he recorded an inappropriate act and it got out and it surfaced, and it went viral… It was recorded on a phone, went through text, then it went through Snap Chat.

Participant S2A2 also identified several specific negative behaviors related to texting and social media she has dealt with in her role. She stated,

> You see a lot of cheating. Snapping a picture and sending it off of whatever it is they are working on…inappropriate social interaction in terms of bullying or sharing pictures that are inappropriate. Setting up drug deals, for example, over social media. Texting with one another or somehow connecting on social media through an app to meet out in the hallways and miss class time, that's really popular.

Several teacher participants also identified specific examples of negative or distracting uses of social media and texting. Participant S1TI explained,

> They are so detached, and they are so concerned about social media all the time, that they are not living the present… What they [students] are mostly focused on is just texting or sending pictures of themselves when they have all this world to open up into… I had my own situation this year with the kid…who didn't like my email I sent him about him getting a D in my room, and he put my email on Instagram along with really untrue things…There was a big fallout with that.

Participant S1T2 stated,

> They are on their social media constantly, and what is really fascinating to me, especially when they are in Snap Chat, is they are not even looking at what is being sent to them. They just click through to protect their streak…the streak of going back and forth sending and viewing something every day from their friends…I would say whenever they are off task, they are checking social media.

Participant S1T4 stated “There’s a huge struggle with kids, with snapping pictures…when something bad happens, you see when trouble is brewing, and you see it ripple through the school because these devices allow kids who aren’t even here to know what’s going on.” Participant S2T1 explained “I don’t want to use the phones at all, because...they recorded each other without permission and then they send it out, so I don’t like that.” She continued with another example and described “I have had kids record me doing demonstrations…they recorded it and sent it out, without my knowing and I was very upset about that, because it made me look ridiculously unprofessional.”

In addition to social media being mentioned by the majority of participants as being a negative component of BYOD implementation, several participants at each site also identified other experiences related to students’ use of devices as being distracting from learning. Participant S1T4 explained, “It can be challenging sometimes to make sure that students are actually on task. I have spent a lot of time talking with my colleagues about the struggle of I know they are distracted; I know they are able to play and do other things.” Participant S2A1 stated, “When it raises to my level, it is typically because a student may have posted something that disrupts the learning environment.” Participant S2A2 expressed,

> [Students] inability to socialize with peers because they are hooked to their phone. At lunch you see a bunch of kids on their phones instead of looking and talking and interacting. It is concerning me that we are taking away opportunities for social skills and we are also interrupting the cognitive processes that take place in learning.

Participant S2T1 stated, “It has actually become harder to use them for academic reasons, because they use them for nonacademic reasons. So, I actually do not use them as much in my class anymore as I used to…They are just so easily distracted.” S2T2 explained, “That phone is very powerful, and when they have it in their hands, there is a lot of off-task behavior that happens…You walk by as you’re circulating the room and student is playing a video game instead of doing what he says he is going to be doing.”

BYOD implementation and support-related experiences. A third type of experience discussed by participants at both sites are categorized as experiences that connect to implementing BYOD or supporting the implementation of BYOD in the school or classroom. These experiences generally fall into one of four categories (a) student discipline and policy violations, (b) management, (c) professional development, and (d) technology support. The BYOD policy itself was also mentioned by participants when discussing their experiences, but this will be discussed later as it specifically relates to research question two.

Three of the four administrators interviewed discussed experiences related to handling student policy violations and student discipline. S1A1 stated,

> We have had to talk through situations where technology is appropriate and when it is not appropriate. For instance, if we are conducting an investigation in the office, we ask students to surrender their cell phones when they come in. Sometimes they don’t understand that. We try to explain the reason for that…I have dealt with kids one on one with a number of those types of issues, whether it is surrendering their cell phones, whether it is curbing their use of their cell

phones, whether it is restricting them from taking pictures or videos of other cell phones.

S1A2 explained, "You have some instances where a teacher may have brought [a] student down for either not obeying or being disruptive with their phones." She continued, "In terms of discipline…we had a young man [describes incident involving use of social media and device] …that was really huge because it was outside of the community and inside the community. And it gave us the opportunity to do a very restorative conference with this young man." Participant S2A2 discussed how her approach when receiving discipline referrals from teachers regarding students' misuse of devices in the classroom. She stated, "When I meet with a student we talk about why the rule might be in place, why they think the teacher has sent them to me, what they could do differently in the future, and then talk about what my expectations are in the future."

Of the eight teachers interviewed, six described experiences related to student discipline and policy violations that were also connected to interactions with school administrators. Participant S1T1 explained, "We bring it [device] down to the front office and we say that you [the student] can get it at the end of the day. So, they [administration] have been pretty good about supporting that…they support when we give consequences for inappropriate use." Participant S1T2 stated, "There has been a tremendous amount of support and backup from administration, and so just knowing that if students are misusing the technology, or abusing the technology in my classroom, I know that I'm going to be able to go to an administrator who is going to support me in that wholeheartedly." Participant S1T4 explained how he is often able to help administration

regarding student discipline issues that are related to the inappropriate use of devices for recording of incidents in school. In one example he stated,

> There was a fight that happened in a separate, small room in the school. It was quick. The kids settled it fast. And within 20 minutes, I was able to find a kid who shared with me a video of the fight. I walked down to administration and said, ok here's the fight. And they were like, this was just what we needed…. we were able to address a situation because of kids having their devices out to record it.

Participant S2T1, when discussing administration response to student write-ups for misuse of devices stated, "Our administration is really good about if we write them up for it, it means we are serious…they are really good about follow through with discipline if we write them for cell phone use." Participant S2T2 also discussed administration support when there are violations of the policy in his classroom. He explained,

> Mostly involving students having a cell phone after you have asked them to put in the caddy. You have developed that expectation and they're ignoring the expectation…You write them up for insubordination, because you've asked them to put it in the caddy and they haven't. And [the administration] would assign, I believe it is a detention on their end…and it is appreciated to know that if you have got a policy it is being followed through on.

Participant S2T3 provided an experience that also related to student discipline and administration support. He stated

> One of my students, while I was organizing some things over in the corner, apparently had pulled out her phone and was SnapChatting or whatever it might be. And one of the administrators walked by and walked right in and said to her,

> in front of the other students, that needs to go away or go on the wall…I appreciated that support at that moment.

Participant S2T4 provided an experience related to a student policy violation in which he stated, "The kid took a picture of somebody else's document and they were writing it out. I wrote it up as academic dishonesty…When I write in the [student data management system] a referral, I always email the parents and I always email administration."

A second type of experience that was identified by participants related to BYOD implementation and support was categorized as being related to the management of BYOD. Participants at both sites indicated that teachers were utilizing a tool to physically manage student access to their devices, specifically their phones. This tool was either a phone caddy or phone bin. Seven participants from the two sites discussed the use of phone caddies or bins in relation to classroom management and student access.

Participant S1A1 stated, "There are several teachers that have wanted…like smart phone holders in the classroom. So, if that is a tool that helps, when appropriate, students disconnect to do other work, so be it." Participant S1A2 explained, "Some learning communities got together and decided that they [phones] were becoming an issue and they began to collect phones. They would order bins and when students came in the door…students would put their cell phone in a bin." Participant S2A1 explained how the phone caddy system was implemented at his site based on a teacher-led initiative. He stated,

> [A] teacher-led initiative where one teacher took control of the phones when they came in and had a phone caddy or shoe holder with numbers on them and devised a system when the students came in they would be assigned one of the phone

> caddy numbers and that is where their phone would go…they monitor what and how it is used because during the class period they might be doing something without technology, but then when they need it, then at that point there would be a transition where students would go get their phone and use it for academic purposes…[The administration] purchased phone caddies for every teacher."

Participant S2A2 described a similar experience, "[The administration] purchased phone caddies, like the calculator holders, for each classroom. And the expectation was that every student would put their phone up in there…Some teachers prefer plastic bins and the students all put their phones in the bin, the lid goes on, and the teacher puts the bin behind the desk." Participant S2T1 explained how she utilizes the caddy system in her classroom. She stated "I just tell them when we are going to use them [phone]. The expectation is that they put them in the caddy when they come in the room." Participant S2T2 also discussed his experience around the use of phone caddies. He explained,

> I think the caddies and that system was rolled out to help us deal with cell phones in the classroom, because it is a tremendous discipline issue…the issues have been cut down tremendously. Students are more on task, students are not always reaching into their pocket, staring down in their laps…They come in the classroom, they put them in the caddies, and when it is time to use them [indicates grabbing them].

Interestingly, two participants, one at each site mentioned how they choose not to use phone caddies in their classroom. Participant S1T4 explained,

> I know some of my colleagues, they walk in the door and have their kids hang their devices up on the wall. I mean you want to see a nervous 17-year old, have a

> kid's phone ring and they are not able to access it. So, I would argue, that if we are trying to support the student, their whole mental development, then part of our job is to teach them how to use the devices correctly.

Participant S2T4 also preferred not to use the phone caddies. He stated, "Cell phones are here to stay…it comes down to responsibility and self-control…I think it is unrealistic to say, when you walk in you have to put your phone in a caddy and you cannot touch it. I just think that is not realistic."

A third type of BYOD implementation and support-related experience identified by participants was in the area of professional development and training. Participants were specifically asked, as part of their interviews, to identify any experiences related to professional development that supported their implementation of BYOD. Professional development experiences discussed included those initiated by administration as well as those initiated by teachers.

In reviewing responses from Site 1 regarding any experiences that participants had related to professional development on BYOD, Participant S1A1 stated, "When we first ran it [BYOD] out, our media specialist did a great job of educating parents, educating our students, educating our staff of what BYOD means." S1T3 also emphasized training that she specifically created when BYOD was first implemented. She stated, "I probably did 15 or 16 trainings. The same training for everybody to have time to come. We talked about what BYOD was, what did it mean…We talked about technology implementation models and we started with the vocabulary and the pedagogy around that…I pretty much developed and created it [the BYOD professional development] all." Participant S1T4 also emphasized professional development that he

participated in when BYOD was first implemented at the school. He explained "There was a lot early on, especially when we switched to Google Classrooms. I remember one of the best PD's I went to was a 3-hour session about 4 years ago where we met with our media specialist and she took us through all the dynamics of Google and Google Suite."

Conversely, Participant S1A2, an administrator, had a difficult time recalling any professional development offerings. When asked if she recalled any professional development around BYOD implementation, she stated,

> Gosh. That is sad to say, but we did not do a lot of that. Teachers may have had that…you know we did have a lawyer come speak to us in regards to…just being careful about the things you put on social media…I think at the beginning of last school year…I would probably say that is the most recent thing that I can recall.

Participant S1T1, similar to Participant S1A2, also had a difficult time recalling any professional development related to BYOD. She stated, "Not a lot of professional development has focused on that…I cannot think of anything recently."

Professional development experiences at Site 2 were a bit different than at Site 1. S2A1 responded, "We have used some of the formative assessment pieces, the applications that are out there. We actually ran our entire staff through the ones that we are aware of and the staff that uses them…We ran them through Kahoot. We ran them through Poll Anywhere." Participant S2T1 also recalls the same type of professional development experience at a staff meeting. He stated, "We do things at staff meetings. We have talked about Kahoot…Poll Everywhere." Participant S2T2 recalls how his professional development experiences introduced him to new tools to use in the classroom with BYOD. He stated,

> That is how I got into the Quizlet Live and the GimKit. In some of our professional development, teachers have called on to present, to show us how they are using technology in the classroom…it was probably 3 or 4 years ago now…So those were individual apps, I would characterize as being individual apps being exposed to those through professional development.

Participant S2T3 recalled a similar experience and stated, "The administration during PD, we have done Kahoot, we have done online polling. They have asked us to pull out our cell phone and answer questions or look up information. So, I think the modeling during PD, how that would actually work or be implemented in a classroom, is there and presented for us to use to our advantage, but not specific maybe to BYOD." He further stated, "I do not think I have ever gone to a PD session specifically on this [BYOD] topic…I do not know that we have ever had a conversation about that [BYOD] particular policy." Participant S2A2 also had a difficult time identifying any instances of professional development directly related to BYOD. She stated,

> There has been a lack of professional development. There might be a tidbit here or there where a staff member will say I found this great think you can do with phones in your classroom and they will spend 15 minutes going over it with the staff. But there is never any follow-up or chance for sandbox time for teachers to practice with that app and see if it would work. It is usually what teachers will share with one another informally, not any kind of formal training on good education uses of the phone or classroom management with the phone.

Participants at both sites also discussed professional development or training they sought out due to their own interest in using technology in the classroom that they related to BYOD implementation. Participant S1T2 explained,

> This year we started doing cohorts, so teachers were able to opt into different themed cohorts, and I actually run the technology and learning cohort with another teacher. So even though it is not specifically because of the BYOD, that is one of the results of this shift. More teachers are using technology in different ways, in better ways. So, we created this cohort.

Participant S2T1 stated, "I have been to the MACUL [Michigan Association for Computer Users in Learning] conference a few times, and of course that whole conference is BYOD. They really show you so many things that you can use with the kids' devices." Participant S2T3 mentioned,

> I know some teachers on our floor go to MACUL. One of the teachers here, she has a degree in technology. I use her as a resource all the time. I have not been specifically to a conference on technology in education. I have gone to AP conferences, because I am an AP teacher. We talk all the time with other teachers when we are at those conferences about how to use this resource or that resource.

Participant S2T4 also expressed how he sought out opportunities for professional development on his own. He stated, "Last year I did a bunch of online things. I did some Google Classroom stuff. I did a couple of webinars. And a lot of it, usually when I do stuff, I am looking for technology type stuff…I look for something that is more technology-based that I can maybe take into my class."

Themes related to research question 1. Overall, four themes were identified after analyzing responses that connected to research question 1. First, although participants at both sites identified both positive and negative experiences, one clear theme that came through was the majority of participants' belief that the implementation of BYOD is positive. Ten of 12 participants identified positive implementation aspects of BYOD and how it could support or enhance student learning. Additionally, four participants, all of whom were teachers and two at each site, made a specific statement that the benefits of BYOD outweighed the negative aspects. However, two participants, both whom were teachers, and one at each site, specifically stated the negative impact of BYOD outweighed any positive benefits.

A second theme that was evident by the shared experiences of both administrators and teachers at both sites was, despite the belief that the benefits of BYOD implementation outweigh the negatives, the use of social media by students has had the greatest negative effects on BYOD implementation. Ten of 12 participants discussed negative experiences of non-academic social media use by students, with several participants citing concerns of addiction, lack of control, and negative social-emotional influences.

A third theme that came through was the lack of BYOD related professional development experiences that participants could draw upon. Although participants were able to identify professional development experiences when specifically asked, interview responses overall indicated a void in experiences that specifically supported the implementation of BYOD. One participant was unable to recall any professional development experiences at all. The remainder of the participants shared professional

development experiences that lacked breadth and/or depth. These experiences were lacking in breadth because they were self-initiated by participants and not offered to all staff as well as most experiences were only offered at the very beginning of implementation or sporadically offered throughout the previous few years. Professional development experiences shared were also lacking in depth because many of the experiences discussed were those in which the professional development was not identified as being specifically for BYOD implementation and/or the material was shared briefly at a staff meeting here or there.

A fourth theme that came through when analyzing participants' interviews was the focus on phones as the primary device referenced. Although the BYOD policy at both sites intended for a variety of personal communication devices to be used, including laptops, tablets, and phones to be used as part of BYOD implementation, when answering questions around experiences, participants tended to refer to phones in their answers. All interview questions used the term device and never specified a type of device; however, all 12 participants used the term phone, cell phone, or smart phone in their responses. All but one participant, the media specialist teacher, responded using a phone-based term multiple times in their interviews. This is not surprising since, as previously identified, 11 of 12 participants identified phones as the primary device that they experienced students bringing and using for BYOD.

Results for Research Question 2

Research Question 2 asked, How does current school policy around BYOD, personal communication devices, and social media influence secondary public school teachers and administrators' implementation experiences? Participants discussed policy

implications throughout their interviews, but all of them responded regarding how policy had influenced any experiences in response to the specific interview question, “Please discuss how school policy has impacted any of your experiences with bring your own device implementation in your school.” Administrators’ responses to the question of school policy influence on experiences at both sites focused primarily on two areas: (a) administration handling of policy violations and (b) policy implementation being the responsibility and domain of the classroom teacher. Teacher responses primarily focused on (a) administrative support and classroom implementation as it related to the policy and (b) policy change and policy discussions.

BYOD policy violations. Both administrators and teachers discussed school policy as it related to violations and administrators’ involvement in and support of the policy; however, this was especially emphasized by administrators. Participant S1A1 explained, “When we do have issues, that is when the policy is called into question.” He went on to describe a specific type of situation and stated, “Sometimes in certain situations, like kids videotaping each other, we have had to discuss parameters of that and violations. Potential privacy violations because a lot of kids don’t know.” Participant S1A2 stated, “It [the policy] has given us a lot of leverage in many cases in which students have misused policy.” Participant S2A2 stated, “I think the school policy here is pretty good and makes it easy to manage on my end.” She explained, “When I meet with a student, we talk about why the rule might be in place.”

Classroom implementation and BYOD policy. Administrator and teacher participants at both sites discussed policy and classroom implementation. However, the perspective of those experiences related directly to the participants’ role. Administrators

discussed how implementation of the school policy was the domain and responsibility of the classroom teacher, while teachers focused more on how the policy influenced the way they chose to implement BYOD in the classroom and how administrators supported the teacher's implementation approach. Participant S1A1 explained, "Some of the teachers have figured it [BYOD] out really well, and some of them have wanted us to look at changes in building policy. But that really gets down to that is your classroom and that is up to how you manage your classroom. We as an administration aren't going to manage your classroom for you." Participant S2A2 explained her experiences with teacher implementation of BYOD policy in the classroom. She stated, "There are a lot of teachers who follow the policy and have very little issues and are able to handle it well…there are some teachers who have a hard time being consistent with the policy and that creates interpersonal conflict with the student." Participant S2A2 further explained that when talking with teachers who struggle with BYOD implementation, she will ask them questions such as "What is your policy? How do you enforce it? What is your strategy?" She emphasized "Really asking them [teachers] what their policy is and how it is impacting the students' learning." From a teacher's perspective, Participant S1T3 also emphasized that the implementation of BYOD policy in the classroom is the teacher's responsibility. She explained, "The fact that we are BYOD does not mean it is free for all. You are the teacher. This is your decision. Do you want cell phones out? Yes or no... This does not usurp your classroom management or what you need for that particular lesson for that particular day." Participant S1T2 discussed how BYOD policy supported her classroom implementation of BYOD. She stated, "It has really changed what I have

felt empowered to do in my classroom or even allowed to do in my classroom."

Participant S1T4 shared a similar sentiment as S1T2. He stated,

> It has been easier to justify doing the things I want to do with students, because once it became policy to encourage kids to bring the device, I wasn't the "rogue" telling them to pull their phones out…You should see kids on the first day of school when I am going over policies and I say "I want you to have your phone out on your desk. I do not want it hiding it in your pocket…It is a lot easier for me to monitor your usage when the device is sitting right there in front of you." The district going to BYOD as an official policy means I do not worry now.

Participant S2T1 explained that the BYOD policy, "Gives me a way to really keep the kids in line…It really does help me monitor what they do…Even before there was widespread use in the building, I have been letting them use them for a long time and our administration has always been really supportive of that." Participant S2T2 discussed his thoughts around implementation of BYOD policy being up to the individual teacher. He stated,

> I think it [BYOD policy implementation] is a process. I think it is an experience. I think that every teacher has to figure how to make it work for themselves. What they are willing to deal with, where they draw the line between the cost and the benefit…I would be against a policy that tried to stop all electronics use. I am more of a middle-of-the-road guy. I like the idea of here are some basic parameters, let's go from there. Each teacher can kind of tweak it.

Participant S2T4 emphasized how the BYOD policy allows each teacher the flexibility to implement the policy the way he or she sees best for him-or herself. He stated, "Our

policy is kind of like if the teacher says it is allowable, than it is allowable when it is used for academic purposes…I feel like that as far as administration goes, I have their support of if I say this is what I want to do, they are going to say 'this the teacher's policy in class, so this is what needs to be followed.'" One participant expressed a negative perspective as it related to BYOD policy implementation. She stated, "I actually think because school policy is that they [students] are allowed to bring your own device, they have a tendency to push back if you want them to put it [the device] way."

BYOD policy change and policy discussions. Several teachers shared experiences or thoughts related to BYOD policy change and policy discussions amongst staff. Participant S1T2 expressed,

> When we first started, we were very focused on a device can be anything. I do wish we could go back and really focus on computer, Chromebook, tablet as opposed to phones…I think that one challenge we are facing is that we are trying to kind of rollback some of the openness that was created in the policy…It is really hard to make a policy more restrictive, once you have created it in a really open way.

Participant S2T1 expressed multiple thoughts around the BYOD policy. In terms of policy change she stated, "I wish there were harsher consequences for kids who do use their phones inappropriately…The detention, they don't really care, they can be on their phone in detention. But to have their phone taken away from them for the day or for an hour, if their parents had to come pick it up. They would, I think, stop using it inappropriately." She also discussed how staff need more discussions around the policy. She explained,

> I think just a time where the staff could sit down and talk about all that, so we were all on the same page would be really good...we do not ever talk philosophically as a staff about what that looks like in the big picture. So, when we let the kids use the phones in class, what does that look like for the rest of their school day, what does it look like for the rest of their academic career.

Participant S2T2 discussed his experience around policy discussions with fellow teachers and potential changes. He stated,

> Another conversation right now is the fact that some teachers do love for students to use their phones in class and some do not. I think there are some teachers who would really like to see phones out of the educational process, simply because of those distracting behaviors. I think we are kind of having that debated right now as to what are the policies going to be moving forward.

He further explained that the policy may need to be different based on the student grade level.

> Some of my students, particularly my AP students, who tend to be a bit more responsible, a little bit more driven, they are able to use the technology and minimize some of that other behavior. My freshman, I have learned, it is a lot harder to use the technology in the classroom because it turns into a classroom management issue as opposed to an academic benefit.

Participant S1T4 also discussed policy changes that addressed the need to consider different approaches at different grade levels as well as subjects.

> I think the big changes … is to roll it out intentionally based on the grade level. Because how a 12th grader can handle their phone is not the same in how a 9th

> grader can. You have to approach it very differently…You have to be intentional in how you approach every grade and every single course. I do not know how a teacher teaching math, would really need their kids to be on their phones…it doesn't make sense, in every class to be using your technology, and especially based on the grade. So, I think that is kind of a big change.

Participant S2T4 in discussing the BYOD policy expressed a need for more discussion amongst staff. He explained, "I think it is important as a staff to almost, yearly or bi-yearly, to come up with some sort of, not necessarily policy, maybe a consensus at least to have conversation of what is acceptable, what is not acceptable." Participant S2T3 also felt there was a need to review the policy more often. He focused on the need to update the language of the policy. He stated,

> The BYOD policies that I have seen in other districts, as well as ours, these are things possibly out of my control, but they tend to be things that were created years ago and are being reused from year to year…Every year teachers pass out a syllabus. That syllabus has the year on it. And I think most teachers, like I do, review their syllabus and their policies, make little changes that will make it better, and then the next year you will notice that the new year is on that syllabus… I would treat it [BYOD Policy] like that. A syllabus that you are constantly reviewing and updating and changing the language.

Participant S2T3 continued by sharing his experience with the policy document language. He expressed, "The BYOD device form is not for a teacher. It is not for an expert in technology. It is for the student to understand how to use the device…it is not written in that student-friendly language. It is written for the technophile."

Themes related to research question 2. Three themes emerged regarding question 2 and the influence of school policy on BYOD implementation experiences. The first theme that came through from both administrators and teachers was how BYOD is implemented in each classroom is based on each individual teacher's choice. Administrators and teachers at both sites discussed how the way BYOD is implemented looks different from classroom to classroom. Eight of the 12 participants discussed in some way how the BYOD policy allows for individual teacher autonomy in their approach to BYOD implementation.

A second theme that came through regarding BYOD policy influence on participant experiences was that the BYOD policy supported each participant's role and responsibilities related to BYOD implementation. The primary role of administrators in relation to BYOD policy implementation was expressed as (a) administrators handling of discipline issues related to BYOD policy violations by students and (b) administrators allowing and expecting teacher autonomy in how teachers chose to implement BYOD policy in their individual classrooms. For teachers, multiple participants expressed that they felt the policy supported the way they chose to implement BYOD in their classroom including any subsequent support by the administration.

The third theme that came through in relation to the influence of BYOD policy on participants' experiences was a need to discuss, review and update the policy based on those experiences. There was not a consensus amongst participants at either site on what the changes based on experiences would be. However, multiple participants identified that since BYOD was first implemented, and based on their subsequent experiences, discussions amongst staff on a variety of policy changes should be considered. One

policy change that a couple of teachers suggested was that the policy should be implemented differently based on the grade level of the students. Another teacher discussed the need to update the policy with more student-friendly language.

Results for Research Question 3

Research Question 3 asked, What are the common experiences identified by secondary public school teachers and administrators' around the implementation of BYOD that may influence school policy? As a result of the interviews of 12 participants, six at each site, multiple common experiences were identified and shared in the previous two sections. However, research question three is really looking at of all of the common experiences shared, how might these experiences influence BYOD policy change moving forward. Moreover, although research question three emphasizes how the common experiences may influence BYOD policy itself, the broader context is how these experiences might influence both BYOD policy and overall BYOD program implementation as a result of implementing the policy.

Three common experiences were already discussed in research question one and research question two results sections that have implications for BYOD policy and BYOD program implementations moving forward. These three common experiences are related to (a) negative influence of social media, (b) professional development and (c) updating BYOD policy. These three common experiences identified as having BYOD policy and program influence will be further explored in Chapter 5's discussion of themes, interpretation of findings, and implications for practice.

A fourth common topic was identified by participants at both sites that could also have influence on BYOD policy considerations moving forward that has not been

previously discussed. This fourth area came through both as a common experience as well as something identified by participants as a need because of their BYOD experiences. Specifically, multiple participants discussed digital citizenship and responsible use in regard to BYOD policy implementation.

Digital citizenship and responsible use. Multiple participants discussed how part of their focus with students when implementing BYOD was emphasizing responsible use of devices. Participant S1T2 stated that when students are on devices, "We have conversations a lot about the fact that this is the time where they have to learn how to self-manage…we were talking a lot about digital citizenship." Participant S1T4 also discussed the need to help students with responsible use. He stated, "I would argue, that if we are trying to support the student, their whole mental development, then part of our job is to teach them how to use the devices correctly." Participant S2T4 emphasized how he focuses on responsible use. He stated, "I try to teach them [students] responsibility more than anything…I have two other careers outside of this and I have never had an employer that banned cellphone use by their employees. It comes down to responsibility and self-control. So, I guess, more than anything, I focus on that with my kids."

Several participants, primarily administrators, discussed the need for digital citizenship education moving forward. Participant S1A1 explained that, "I would do lot more with digital literacy. What does that look like for the professional? What does that look like for the student?" Participant S1A2 expressed, "Making sure staff is educated enough so that they can help kids utilize it the way they need to utilize it…actually put some things in place, some lessons in place in which they can use those phones, or use their devices in a way that supports the classroom…As the adults, we have to make sure

we are giving them the right ways to handle what they [students] do." Participant S2A2, also an administrator, stated, "I think there is value in teaching students how to use their phones responsibly." Finally, participant S1T2 expressed, "I wish…that we put more discussion about phones and appropriate use…teaching them specifically about this idea of responsible and appropriate use."

The topic of digital citizenship is a common theme that has implications for BYOD policy and program implementation. The findings around digital citizenship will be further discussed in Chapter 5.

Summary

Chapter 4 presented the findings of a phenomenological study of public high school teachers and administrators who have experiences implementing a Bring Your Own Device program in their school. The chapter provided an overview of the phenomenological research study data collection process and methods. The study took place at two sites and a description of each site location was provided. Six participants at each site, for a total of 12 participants, were included in this study. A description of all 12 participants demographic information was provided.

Participants responses to interview questions were organized around each of the three research questions. Specific narratives expressed by participants were included in chapter 4 to share participants phenomenological descriptions and establish shared experiences around BYOD policy and program implementation in their respective schools. Multiple themes emerged through analyzing these phenomenological descriptions of experiences.

Eight themes emerged amongst the phenomenological experiences of participants from both sites around BYOD policy and program implementation. The first four themes were related to general common experiences shared by participants. These themes were (a) BYOD was positive, (b) social media use had the greatest negative impact on BYOD implementation, (c) professional development support for BYOD was lacking, and (d) phones were the primary BYOD device used by students. Three additional themes emerged that were connected to BYOD policy related experiences. These themes were (e) How BYOD policy is implemented in the classroom is teacher dependent, (f) The BYOD policy supported implementation roles and responsibilities, and (g) BYOD policy needs to be discussed, reviewed, and updated. A final theme that arose as a result of participants experiences was (h) Digital citizenship education should be part of BYOD implementation.

These eight themes will be summarized and interpreted in the next chapter. Chapter 5 discussion will highlight how some of the themes may have implications for BYOD policy and program implementation considerations. These implications could provide guidance to public schools looking to implement BYOD programs in the future or changes for schools that have already implemented BYOD. Chapter 5 will also discuss the overall implications of this study on current BYOD research and the overall field of instructional technology and distance education. Chapter 5 will conclude by identifying future recommendations for research as well as limitations of this study.

Chapter 5: Discussion

Introduction

The intention of this phenomenological study was to explore the lived experiences of public high school teachers and administrators in southeast Michigan who have implemented a Bring Your Own Device program in their school. There is growing literature on the implementation of BYOD programs in public schools and universities throughout the United States. Most of these studies focus on the initial implementation phase of BYOD programs. This study adds to the literature by exploring the actual lived experiences of educators who have been implementing a BYOD program in their respective school for at least two years. Looking at the actual lived experiences could help determine if these experiences can provide insight to other schools looking to implement BYOD programs as well as provide guidance on potential BYOD school policy considerations. As explained by van Manen (2014), through investigating the lived experiences of persons who have experienced a common phenomenon, we can make deeper meaning around the given phenomenon that they have all experienced. The phenomenon being researched in this study was the implementation of BYOD in two secondary schools located in Southeast Michigan. The research questions asked were:

1. What experiences do secondary public school teachers and administrators in Michigan have regarding the implementation of bring your own device programs that include the use of personal communication devices and social media applications?

2. How does current school policy around BYOD, personal communication devices, and social media influence secondary public school teachers and administrators' implementation experiences?
3. What are the common experiences identified by secondary public school teachers and administrators' around the implementation of BYOD that may influence school policy?

This chapter will discuss the summary of the findings of these research questions, interpretations of those findings, implications for practice, limitations of the study, recommendations for future research, and end with a summary and conclusions.

Summary of Findings

Data for this study were collected via face-to-face interviews from 12 participants at two different school sites. Each site had six participants that included four teachers and two administrators. The data analysis sought to find the essence of the lived experiences of all of the participants. As explained by Creswell (2013), "The essence is the culminating aspect of a phenomenological study." (p. 79). As the researcher, in order to fully understand this "essence," it was important to employ the phenomenological concept of epoche in which the researcher "set[s] aside our prejudgments, biases, and preconceived ideas about things" (Moustakas, 1994, p. 85). By employing epoche, the researcher is better able to make meaning out of the lived experiences being studied.

The data analysis process then employed transcendental phenomenological reduction. This allowed the researcher to develop a "textural description of the experience" (Moustakas, 1994, p. 96) through the use of the phenomenological research methods recommended by van Manen (2014) that included (a) a wholistic reading

approach of transcribed interview transcripts, (b) a selective reading approach to identify statements that started to reveal more about the phenomenon being studied, and (c) a detailed reading approach in which individual sentences were examined, themes began to emerge and codes were created. Coding methods of in vivo and values coding as recommended by Saldana (2016) were employed to create these codes.

Finally, the data analysis concluded with imaginative variation to "recognize the underlying themes or contexts that account for the emergence of phenomenon. (Moustakas, 1994, p. 99). The codes were thoroughly examined, and eight themes emerged from the lived experiences of the participants in this study. Each of these eight themes are discussed here.

Theme 1: BYOD was positive. The majority of participants (10 of 12) from both sites identified positive experiences related to the implementation of a BYOD in their schools. Furthermore, four participants specifically stated that the benefits of implementing BYOD outweighed any negative aspects. Participants identified a variety of ways that students having access to their own personal communication devices supported student learning including communication, collaboration, formative assessments, research, and immediacy of access to information. The theme of BYOD implementation being an overall positive experience is similar to findings of other studies in which BYOD has been implemented in secondary schools. Adhikari, Mathrani, and Scogings (2016) found in their study of BYOD in a secondary school in New Zealand, that teachers had a positive outlook on the school's implementation of BYOD and had "seemed to have embraced the opportunity to make positive change." (p. 296). In Murray, Luo, and Franklin's (2019) phenomenological study that looked at BYOD

implementation in a middle school (grades 5-8) located in a midwestern state, they were able to conclude, based on the experiences of the participants that "always-on and connected technology affords an immeasurable benefit to this middle school learning environment." (p. 74). Finally, in their BYOD study of post-secondary educators at multiple Greek universities, Livas, Katsanakis, and Vayia (2019) found their results to "indicate that post-secondary educators recognize the positive impact of BYOD initiatives on students' learning." (p. 502)

Theme 2: Social media negatively impacted BYOD implementation. Although the majority of participants identified BYOD as being more positive than negative, the majority of participants (10 of 12) identified inappropriate social media use by students as being the greatest negative outcome of BYOD implementation. Participants noted that the social media use caused distractions from student learning and often involved instances of bullying, peer mistreatment, and inappropriate posting of photos and videos. Social media as a distraction in a BYOD environment is a finding that is congruent with findings in similar studies. In Selwyn, Nemorin, Bulfin, and Johnson's (2017) study of BYOD in three Australian High Schools, the researchers noted that "all three schools saw students engaging in regular uses of social media…students' enthusiasm for social media was rationalized by some teachers as 'the new way to pass notes.'" (p. 12). Kay, Benzimra, & Li (2017) noted in their study of three high schools in Canada that implemented BYOD that the "use of social media was the third most frequent distraction pursued by secondary school students during class—about half engaged in this activity on accession or regularly." (p. 987).

While these two studies reference social media in a general sense and did not identify specific social media applications that were distracting, in this study, one particular social media application, Snapchat, was overwhelmingly referenced by participants as most often being a distraction in the classroom. Snapchat was identified as the application that caused the most issues amongst students and teachers, primarily due to the types of negative content that was shared through the use of this application. It is not surprising that the previous studies did not mention Snapchat, as these studies were published in 2017, before Snapchat was widely used.

According to data published by Jaffray (2018), when surveyed about their favorite social media application in the spring of 2015, 11.5% of teen users indicated that Snapchat was their fourth favorite social media application. Facebook was 3rd at 12%, Twitter was 2nd at 21%, and Instagram was first at 29%. However, by the fall of 2018, there had been a marked shift in rankings. Teens surveyed then identified Snapchat as their favorite social media application, with a rise to 46%. Instagram also saw a rise to 32% but has been greatly outpaced by Snapchat. Twitter dropped to 6% and became the 3rd favorite application. Facebook landed in 4th place, at 5%. Therefore, the results of this phenomenological study in which participants identified Snapchat as the most frequently used social media application is in alignment with current data regarding teen use of Snapchat.

Theme 3: BYOD professional development was lacking. The third theme that emerged from the data analysis was that participants' experiences demonstrated a lack of professional development experiences both in breadth and in depth. At site 1, participants noted that during the initial phase of BYOD implementation there were initial

professional development offerings regarding the pedagogy of teaching in a BYOD classroom as well as the management of BYOD. Participants at site 1 mentioned Google training, management of devices, and technology implementation models as training topics provided during the first year of BYOD implementation in their school. However, they noted that subsequent professional development specifically to support BYOD had not been systemically provided since that time. Some were able to identify professional development resources they had sought on their own as a primary way of continuing their personal growth around BYOD implementation; however, no schoolwide efforts to provide follow-up support had been offered.

At site 2, several participants were able to share professional development experiences at their school that related to BYOD implementation; however, these experiences lacked depth. They noted that most of the professional development experiences that they had experienced were not specifically identified as BYOD in nature but could be considered beneficial when implementing BYOD. For example, several participants at site 2 noted how administrators and teachers had shared formative assessment applications using mobile devices for use with students. They described how, when these applications were shared, it was often a brief introduction during a staff meeting and that little time was provided to explore and discuss the application, and follow-up was rare. Additionally, several participants also mentioned that, due to their own personal interest in BYOD, most of their professional development experiences were based on training they pursued for their own individual growth towards improving how they used technology in the classroom. Overall, both sites showed a lack of professional development experiences that supported BYOD implementation over time. Although site

1 had initial offerings, these offerings did not span beyond the initial phase and at site 2 the professional development lacked depth and coordination.

Theme 4: Phones are the primary BYOD device used by students. Eleven of 12 participants identified phones as the primary device being utilized by students as part of BYOD implementation at their school. Initially, when BYOD was implemented at both sites, phones were one of several device types that students were allowed to bring. Additional devices that students were encouraged to bring were laptops, Chromebooks, and tablet devices. One especially interesting phenomenon that occurred throughout the interview process was that when participants were asked to share their experiences with BYOD implementation at their school, which was inclusive of all types of personal communication devices, the majority of participants invariably answered the question using the term phone, cell phone, or smartphone. This may be indicative that participants interpreted the term BYOD as being synonymous with phones due to the prevalence of phones being used by students as their primary BYOD device.

Furthermore, when participants discussed policy and management experiences related to BYOD, their answers most often referred to students' misuse of their phones versus referring to violations of BYOD policy itself. Participants, including both administrators and teachers, highlighted how many teachers were currently using phone caddies and bins in the classroom to better manage and monitor student use of their phones. Initially, when BYOD was implemented at both sites, phone caddies had not been identified as a necessary tool to manage the BYOD program. However, over time, BYOD at both sites has morphed into students bringing and using their phones as the primary BYOD device they are using throughout the school day for both academic and

non-academic purposes. Phones were not originally developed to be an educational tool and were not necessarily the primary device that school educators intended to be the focus of BYOD implementation. However, in this study, experiences at both sites indicate that the use of phones as part of BYOD has become the primary device of BYOD implementation by students, teachers, and administrators at their schools. The significance of this shift will be discussed in the implications for practice section of this chapter.

Theme 5: BYOD implementation is teacher dependent. A fifth theme that the data analysis of participants' experience revealed was that the implementation of BYOD in the classroom was heavily based on individual teacher choice. If, how, and when teachers chose to implement BYOD was left up to the discretion of the individual teacher. A wide spectrum of implementation choices was evident at both sites from teachers who were fully invested into BYOD implementation in their classroom to others who utilized devices on a limited basis and various levels in-between. There was no consistent demographic of participants connected to which teachers chose to be more liberal with their implementation as compared to those who were more conservative. However, the amount teachers either limited BYOD use or leveraged it for learning did seem to be connected to the individual teacher's values beliefs, and efficacy. Those who were more open with their use of BYOD tended to share a belief that it was the teacher's responsibility to help students understand how to use the devices appropriately and monitor when they were not. These teachers, at both sites, also tended to emphasize the importance of having positive relationships with their students as part of their BYOD implementation in their classroom. Teachers who utilized BYOD the most in their

classrooms demonstrated confidence in their ability to handle distractions appropriately with students. Those few teachers who leaned towards heavily limiting BYOD in their classroom tended to focus on the difficulty and frustrations they had with managing student distractions related to devices and specifically phones. This caused many of them to use devices less often than they might otherwise. It appears that teachers who had stronger self-efficacy around BYOD implementation were more likely to leverage it more often than those who did not. This finding regarding BYOD being heavily teacher dependent is similar to findings by Selwyn et al. (2017). Their study of teachers who implemented BYOD in an Australian high schools also found varying levels of implementation varied widely. They explained,

> In practice the implementation and embedding of personal devices into the schools' processes and practices had proven to be a largely bottom-up, *ad hoc* processes. These led to a variety of understandings, practices and modes of use being adopted by different teachers…How devices were being used and understood throughout the three schools was a site of on-going (re)negotiation amongst individual teachers and their students. (p. 23)

Administrators at both sites also emphasized that the way BYOD was implemented in individual teacher's classrooms was at that teacher's individual discretion and their role as an administrator was to provide any support based on how the teacher chose to leverage or not leverage BYOD. Administrators indicated their support came in the form of upholding classroom policy when students may violate the teacher's class rules and providing materials like caddies and bins to teachers who wanted them for management of devices. Overall, administrators similarly recognized that a wide level of

implementation models existed in their individual school based on the level of teacher efficacy, knowledge, and experience. No systemic process for how BYOD should be implemented had been created at either site in this study. Both sites offered support on how teachers might implement BYOD; but neither created a system of expectations for teacher implementation, thus resulting in various classroom models throughout each school based on teacher choice.

Theme 6: Current BYOD policy is supportive. Administrators and teachers at both sites felt that the current BYOD policy at their school supported their specific role. Administrators, as upholders of the policy, tended to focus more on how existing policy provided them the leverage they needed to discipline students who violated the policy. Several expressed that the policy was broad enough to allow them flexibility in how they applied discipline consequences to students while specific enough to allow them to be able to appropriately respond to student violations of policy. Teachers, overall, expressed that they felt the policy was also broad enough to allow them the flexibility of how they implemented BYOD in the classroom while specific enough for administration to follow-up with any students who teachers referred for policy violations.

Theme 7: BYOD Policy needs to be reviewed and updated frequently. A seventh theme that emerged was also related to BYOD policy. As previously noted, although participants did feel that current policy supported them in their given role, many participants also indicated a need for the BYOD policy to be updated more frequently. Several mentioned that, other than the initial implementation of BYOD or when students come in as 9th grade students, BYOD policy had been rarely reviewed or discussed by students or staff. Several participants emphasized a need for staff to come together more

often and discuss how the policy might be improved or updated. Two participants specifically suggested that annual or bi-annual discussions would be beneficial towards ensuring the policy is more current and responsive to changes that are occurring with the way students are using devices. One participant, S2T3, compared the policy to a syllabus and suggested that the school should engage in a process of "constantly reviewing and updating" the document. Although there were no consistent recommendations for how the policy might be improved, there were multiple instances in which the participants indicated the need for staff to come together more often to discuss the policy itself, discuss how they are implementing BYOD in the classroom, and share possible recommendations moving forward. The overall sentiment was that the BYOD policy should not be a stagnant document that sits on a shelf, but rather a living document that is responsive to the current context of what staff are actually experiencing when implementing BYOD in their school.

Theme 8: Digital citizenship education. The final theme that emerged from the data was a desire or need expressed by participants for a focus on digital citizenship education. The International Society for Technology in Education (2020) in their standards for students provides guidance on how students can demonstrate digital citizenship: "Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical" (p.1, para 2.).

Participants' interviews underscored a need for teacher training on how to teach students digital citizenship and responsible use, and students need curriculum on the subject. Multiple participants recognized the need for a more formalized schoolwide plan

to provide the needed digital citizenship training to teachers and digital citizenship curriculum to students. Several teacher participants indicated they had initiated some level of digital citizenship and responsible use discussions in their classrooms; however, this was primarily ad hoc and based on the individual knowledge-level and desire of that teacher. Several participants recognized that a comprehensive approach to digital citizenship education presented a gap in their school's implementation of BYOD and was a need for their school moving forward.

Interpretation of Findings

This study's initial aim was to investigate the shared lived experiences of educators involved in implementing a BYOD program in their school to determine if any of these shared experiences may be helpful in future BYOD policy and implementation considerations. BYOD has been a program that many schools have implemented as a way to address the growing need of student access to technology devices that schools are not always financially capable of providing. In this study one thing became abundantly clear: "The BYOD device utilized by students the most in this study was phones. Further, teachers and administrators, when initially implementing BYOD in their school, did not necessarily plan for phones to be the primary device. Teachers and administrators have had to make adaptations to how they implement BYOD in their classroom due to the prevalence of phone use by students. In their recent 2019 survey of teen ownership of smartphones, Common Sense Media (2019) reported that 53% of young people aged 11 owned a smartphone, and between the age of 16 and 18 the ownership rate averaged 89%. Mobile devices and especially smartphones are not going away. Schools

implementing BYOD need to be aware of landscape moving forward of smartphones being the primary device that students will likely bring to school to access technology.

The majority of participants in this study expressed that BYOD implementation in their school was a positive experience. However, their collective experiences also highlight that in general the implementation has been somewhat ad hoc in nature. Teachers at both sites were allowed to choose if, how, and when they implemented BYOD. This ad hoc approach has left gaps at both sites in terms of a consistent long-term plan for providing professional development, teaching digital citizenship, managing social media use, and maintaining a BYOD policy that is current and responsive to the changing context of their school's BYOD program.

Site 1 opened their school building with the BYOD policy in place; whereas site 2's implementation occurred more over a period of time that morphed from a laptop program to BYOD. However, both sites experiences portrayed a lack of long-term planning related to their implementation, beyond the initial phase, that was comprehensive and systematic.

The findings suggest that at each site professional development was not offered with a long-term plan in mind. Site 1 offered professional development initially that focused on tools for supporting Google and technology implementation models in the classroom; however, subsequent BYOD-related professional development primarily involved those teachers with a personal interest or desire to learn more and was self-initiated. Site 2's professional development offerings on BYOD were sporadic and how teachers utilized the training was individualistic, again depending on teacher's own interest and desire. Darling-Hammond, Hyler, and Gardner (2017) emphasize that for

professional development for teachers to be effective that the professional development plan should comprise most of the following components: (a) content-focused, (b) incorporates active learning, (c) supports collaboration, (d) uses models of effective practice, (e) provides coaching and expert support, (f) offers feedback and reflection, and (g) is of sustained duration. (para 4-7). Although the BYOD professional development experiences shared by participants at both sites were not specifically evaluated against these seven components; the experiences shared may point to gaps in the way BYOD professional development was planned and offered and could serve as a guide moving forward to create a comprehensive plan for professional development.

The BYOD implementation at both sites seemed to lack a systemic plan for teaching digital citizenship skills to students and many expressed this as a need moving forward. Additionally, the greatest struggle that teachers had in managing BYOD was dealing with the negative impact of social media use by students. In their study on teaching digital citizenship through the use of social media, Gleason and von Gillern (2018) suggest that leveraging the use of social media to teach digital citizenship creates users who are more responsible users of social media and stronger digital citizens. It is interesting to consider that there may exist a connection between the lack of a comprehensive digital citizenship curriculum at each site and the struggles participants at each site had managing social media use by students. Rodgers (2012) found in his study of social media policy in secondary schools in the United States that those schools that implemented social media education as part of their social media policy had more positive outcomes related to social media use in their schools than those that did not. Rodgers (2012) explained,

> School districts that had an instructional focus for social media activities had less infractions of use. Examining detail of social media violations led to discovery that when infractions were made, users were not aiming to achieve stated instructional goals. If a school district includes social media tools as a portion of their instructional plan, stakeholders are more likely to learn its best use and use it towards the outlined goals. (p. 147)

Dennen, Rutledge, and Bagdy (2019), in their study of social media use by students in a North American high school, also found a lack of social media education programming. They found that teachers tended to give direction about social media in "the form of rules and consequences rather than modeling and coaching" (p. 211). Dennen et al. (2019) go on to suggest based on their study findings that, "social media education for both teachers and students is one way to promote a more peaceful existence of social media in the school setting and to help students improve their ability to use social media maturely" (p. 211-212).

The experiences of participants at both sites in this study revealed a lack of digital citizenship education for students. The lack of instruction in this area for students may be connected to the negative social media experiences shared by the majority of participants, since students have not been given systemic educational guidance on how to leverage social media appropriately in school.

Understanding the lived experiences of participants who implemented a BYOD program also provided a better understanding of BYOD policy implications. Overall, participants felt that current BYOD policy was supportive, and they had no uniform policy change recommendations. However, what became evident through analysis of the

participants' experiences was the need for frequent BYOD policy discussions amongst teachers and administrators to evaluate the policy, discuss changes, and make sure the policy is updated regularly. BYOD policy needs to be revised frequently enough so that it evolves with the changing landscape of student device use. This need for frequent policy discussion and revision is in alignment with Kozma's (2010) education policy development process. This process for policy development contains four key components. The key component he identifies in the policy development process that speaks to the results of this study is the need to "evaluate and adapt the policy" (p. 4). Within the component of evaluating and adapting the policy, Kozma (2010) identifies specific steps: (a) monitor, adapt, and revise; (b) measure success, and (c) recommend change. (p. 10). This component of the BYOD policy development process at both sites was not evident in the participants' experiences.

Implications for Practice

The results of this study provide several implications for BYOD program and policy implementation practices that may be beneficial to schools who are currently implementing BYOD or are looking to implement BYOD in the future.

Professional development. Create a systemic plan for professional development to support BYOD implementation that is embedded and ongoing. The results of this study revealed that a systemic plan for professional development was lacking at both sites. In Adhikari et al.'s (2017) study of BYOD in a secondary school, teachers specifically attributed the success of their BYOD to the abundance of professional development that included "conferences, seminars, mentoring programs and peer support." (p. 296). One sample teacher's comment from their study emphasizes this point. "Because of all of the

professional development, our journey has been easy so far" (p. 296). Many models for teacher professional development exist; however, Darling-Hammond et al. (2017) provide a strong framework for effective teacher professional development that is based on an extensive review of education studies from 1990 to 2017. Their framework serves as a best practice guide for designing professional development. Schools that are implementing BYOD could use this framework as a source to design effective professional development.

Digital citizenship education. Create and implement digital citizenship education that includes curriculum on using social media. This study revealed a need for a comprehensive digital citizenship education program that addresses social media. Kim and Choi (2018) describe a framework for adolescent digital citizenship that they developed using ISTE's student standards as a guide. Kim and Choie's (2018) S.A.F.E. framework is organized into four categories:

- Self-identity: Building personal values and beliefs in the digital environment and to protect themselves from potential risks
- Activity in online: Engaging in positive and reasonable activity and interact with others through rational decision-making
- Fluency for digital environment: Using software and hardware to achieve a variety of goals and keep up with changing digital environment
- Ethics for digital environment: Demonstrating an understanding of and respect for the rights and obligations of others in digital environment. (p. 159)

This framework could serve as a guiding model for schools looking to implement digital citizenship.

Krutka and Carpenter (2017) provide guidance for teaching digital citizenship that includes teaching about and with social media that could serve as reference for schools. Coupled with the S.A.F.E. framework, schools could use these resources to guide their development of digital citizenship education programming that also incorporates social media use.

BYOD policy, a living document. Treat your BYOD policy like a living document that is discussed, updated, and revised regularly by stakeholders. Tools and applications change quickly in education, and policy should be responsive to those changes versus sitting on a shelf. Both sites in this study expressed that although BYOD policy was supportive, there was a need to discuss it and revise it regularly so that the policy can address changes that are quickly occurring within educational technology. Findings from both sites also indicated that although BYOD initially was intended for a variety of mobile devices, the primary device that students brought to school was phones and the primary distraction with those phones was social media use. BYOD policy at both sites had not necessarily initially been written to address a BYOD environment in which phones and social media were dominating the BYOD implementation experience. Best practice in education policy development and implementation recommends that school policy follows a continuous improvement process. This process includes a phase in which the policy is evaluated and adapted on a regular basis and includes stakeholder input (Kozma, 2010). Schools implementing BYOD policy would benefit from a continuous improvement plan that ensures a process that includes evaluation and revision.

Limitations

Three limitations were identified from this study: (a) participant selection and sample size, (b) site location, and (c) data analysis.

Participant selection and sample size. The first limitation of this study is that the number of participants from whom data were collected was relatively low:12 participants overall and 6 participants at each site. Although Creswell (2013) indicates that a panel size of 3 to 15 participants is adequate for a phenomenological study, the participants selected for this study may not fully represent the collective experience of all those who engaged in the phenomenon of BYOD implementation at each site. Further, the participants who were selected may have personal reasons for participating in the study that could have influenced the way they expressed their experiences around the phenomenon being studied.

Because participants were drawn from two suburban high schools in southeast Michigan , their experiences may not be representative of experiences teachers and administrators in urban or rural areas both in and outside of Michigan. Further, interviewees may not truly represent the views of the population they represent. It may be difficult to generalize the results to a wider population.

Data collection and analysis. The final limitation of this study is the data collection and analysis process. The interview is the primary data collection process for phenomenological studies. The researcher as interviewer is the primary data collection instrument. The quality of the interview relies on the researcher to ask questions that serve to enhance the interview and do not negatively impact the interview. Because the researcher in this study was new to the interview process for data collection, the level of

expertise of the researcher could impact the quality of the interviews. Sohn et al. (2017), offer some guidance on conducting interviews. This guidance included: a) remain silent after posing questions, b) avoid asking "why," c) avoid trying to elicit emotions of interviewee, and d) avoid asking questions to gather factual details—focus on getting the meaning of the experience. Utilizing this guidance as well as the Interview Protocol (Appendix C) helped to minimize the inexperience of the researcher in conducting interviews.

The researcher was also new to using coding methods to analyze data. The research outcomes are subjected to the ability of the researcher to properly analyze the data using coding processes and identify subsequent themes. To help minimize this limitation, the researcher used two types of coding methods: in vivo and values coding to provide a broader perspective around the data.

Recommendations for Future Research

The results of this study add to the body of literature on BYOD programs, BYOD policy, and social media use by secondary school students in the United States. However, much is yet to be learned.

The sample size of this study was relatively small, with 12 participants. Future research may benefit from a study that incorporates the lived experiences of a larger sample size of teachers and administrators who have implemented BYOD. By expanding the sample size, experiences may be identified that offer a greater level of understanding to the phenomenon that were not detected in this study. Furthermore, the two sites for this study were located in two suburban high schools in Michigan. Expanding the study to schools located in other regions of Michigan such as urban and rural areas or in other

states where teachers and administrators may have had different lived experiences, could add to the body of knowledge on the topic.

Future research on BYOD implementation might benefit from additional types of methodology and data collection approaches. A program evaluation on a school's BYOD implementation could review what the initial goals of the BYOD implementation were and evaluate if the goals of the BYOD program were met. Alternatively, a case study approach may also provide additional insights on BYOD implementation. A case study typically involves an "in-depth exploration of a bounded system" (Creswell, 2012, p. 465). Using a case study approach, extensive data around the phenomenon could be collected through a variety of methods including focus groups, document analysis, and surveys.

One area this study did not focus on was the specific language of the BYOD policies of each school. Future research might benefit from conducting a BYOD policy study that looks more deeply at how BYOD policy is written and how well the policy language aligns with practice. A policy study could also examine BYOD policy development processes and how that might impact lived experiences of educators.

This study focused on the lived experiences of teachers and administrators involved in implementing a BYOD program in their school. Another recommendation for future research is to investigate students' perspectives on their lived experiences of BYOD implementation and compare their experiences to teachers and administrators' experiences. BYOD is intended to support teaching and learning, ultimately for the academic success of students. Students' voices on this topic could provide a valuable perspective on how BYOD programs and policies could be improved.

As more schools are implementing BYOD and educational technology in general, digital citizenship will continue to be an area of need for schools to consider how they are implementing quality curriculum on this topic. Additional research on digital citizenship education and how to successfully leverage digital citizenship that addresses social media use in schools could also be an area of future research that would add to the current body of literature.

Summary and Conclusion

The aim of this study was to gather the lived experiences of school educators who had implemented BYOD programs to identify common experiences that may influence BYOD program implementation and policy. Using a phenomenological method, data were collected from two high schools in southeast Michigan that had implemented BYOD programs. Interviews of teachers and administrators at each of the two sites were conducted and those interviews were analyzed for common themes around those experiences in order to identify the "essence" of the lived experiences of the study participants. Understanding the experiences of teachers and administrators can help others who may have also experienced a similar phenomenon.

Several themes emerged from the data and resulted in several key findings that have implications for schools looking to implement BYOD or who may have already implemented BYOD. These implications impact both BYOD program implementation and BYOD policy. Schools planning to implement BYOD are encouraged to develop a comprehensive professional development plan that is embedded and ongoing, using research-based models. This professional development plan should go beyond the initial phase of implementation and be revisited often. Additionally, schools should look at

adopting and implementing digital citizenship education that includes a social media use component. By creating a comprehensive professional development plan and providing digital citizenship education for students, schools will be better prepared to ensure a successful BYOD program.

Finally, schools need to utilize a research-based policy development model to develop their BYOD policies. The policy development model should utilize a continuous improvement process that includes evaluating and updating the policy on a regular basis. In essence, they need to create a BYOD policy that is a living document that can be adjusted as the needs of the BYOD program shift and change.

BYOD programs are becoming more commonplace in schools as mobile technology continues to be accessible by more young people. As noted in the most recent Common Sense Media (2019) survey of teen use of technology, by the age of 11, 53% of young people already own smartphones, by age 14 the number rises to 81%, and by age 16, 89% of teens own a smartphone. How schools choose to address student mobile device use may not be uniform. However, BYOD studies like this one may offer guidance for schools who want to leverage the technology they witness students bringing into their school every day.

The results of this study provide several recommendations for BYOD implementation in K-12 schools. Educators looking to implement BYOD in their school would likely see benefits if they develop a systematic BYOD program implementation plan that includes effective professional development, digital citizenship education, and BYOD policy development that is based on a continuous improvement process.

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Appendix A

Letter of Introduction and Intent

Letter of Introduction and Intent

Dear Colleague,

My name is Sophia Lafayette and I am a doctoral student in the Fischler College of Education at Nova Southeastern University. I am conducting an online research study titled, **Understanding BYOD Implementation Experiences of School Teachers and Administrators: A Phenomenological Study**.

The purpose of this study is to gather the lived experiences of educators working in schools located in Michigan on the implementation of BYOD programs that include the use of personal communication devices and social media applications. These lived experiences could help to inform policy decisions around bring your own device programs in public schools in Michigan and possibly throughout the United States.

The use of newer types of educational technology tools and resources in schools has outpaced the development of policy designed to govern these resources. In many instances, school districts are revising older acceptable use or personal communication device policies that were not originally designed for the current context versus designing newer more applicable and up-to-date policy.

The intended outcome of this study is to use the information gathered to help inform K-12 school policymakers working in public schools on considerations for the development or adjustment of current policy around bring your own device programs.

The phenomenological research method will be utilized to conduct this study. The researcher will invite qualified participants to be interviewed face-to-face regarding their experiences with the implementation of a bring your own device program in their school.

Interviews will take approximately 60 minutes and will be recorded. All participants identities will remain anonymous, although their demographic data will be captured.

Qualified participants are educators (teachers and administrators) in an identified school district that has been implementing a bring your own device program for a minimum of two years. You are being contacted to participate in this study because you are an educator with experience implementing a bring your own device program.

If you are willing to participate in this important study, please review the letter of informed consent and confidentiality and return the signature page via email to sl1203@mynsu.nova.edu to participate in this study. Upon receipt of your signed informed consent you will be contacted by email within one to two weeks to schedule your interview.

Letter of General Informed Consent is included in attached documents.

Sincerely,

Sophia Lafayette

Appendix B

General Informed Consent

General Informed Consent Form
NSU Consent to be in a Research Study Entitled
Understanding BYOD Implementation Experiences of School Teachers and Administrators: A Phenomenological Perspective

Who is doing this research study?

College: Abraham S. Fischler College of Education

Principal Investigator: Sophia Lafayette-Lause, B.A.S., M.Ed., Ed.S.

Faculty Advisor/Dissertation Chair: Charles Schlosser, PhD

Site Information: N/A

Funding: Unfunded

What is this study about?

The purpose of this research study is to investigate the lived experiences of school educators who have been involved in implementing bring your own device programs including the use of personal communication devices and social media applications. The data collected from interviews of educators will be used to gain a deeper understanding of lived experiences on the research topic. This information may be used to help provide suggestions for policy considerations for schools that implement bring your own device programs. This study will benefit public schools by providing suggestions for considerations to create a model up-to-date school policy to help schools govern bring your own device programs.

Why are you asking me to be in this research study?

You are being asked to be in this research study because you have direct experiences related to the implementation of bring your own device programs in schools.

This study will include approximately 12 people. It is expected that 6 people will be from this location.

What will I be doing if I agree to be in this research study?

While you are taking part in this research study, you will participate in a 60-minute interview.

Research Study Procedures - as a participant, this is what you will be doing:

You will agree to meet with the researcher at an agreed upon time and location to participate in an interview that will take approximately 60 minutes. The interview will be recorded to create a transcript as the interview takes place. During the interview, you will answer questions regarding your personal experiences around the implementation of a Bring Your Own Device program in your school.

Are there possible risks and discomforts to me?

This research study involves minimal risk to you. To the best of our knowledge, the things you will be doing have no more risk of harm than you would have in everyday life.

There is a slight risk of loss of confidentiality if your information is obtained by someone other than the researcher or dissertation chair. However, every precaution will be taken to prevent anyone other than the researcher or dissertation chair from obtaining this information, including password protection of all documents and databases.

What happens if I do not want to be in this research study?

You have the right to leave this research study at any time or refuse to be in it. If you decide to leave or you do not want to be in the study anymore, you will not get any penalty or lose any services you have a right to get. If you choose to stop being in the study before it is over, any information about you that was collected **before** the date you leave the study will be kept in the research records for 36 months from the end of the study and may be used as a part of the research.

What if there is new information learned during the study that may affect my decision to remain in the study?
If significant new information relating to the study becomes available, which may relate to whether you want to remain in this study, this information will be given to you by the investigators. You may be asked to sign a new Informed Consent Form, if the information is given to you after you have joined the study.

Are there any benefits for taking part in this research study?

There are no direct benefits from being in this research study. We hope the information learned from this study will be used to help make recommendations that could be used to create model acceptable use policy that addresses bring your own device programs for use by public schools.

Will I be paid or be given compensation for being in the study?

You will not be given any payments or compensation for being in this research study.

Will it cost me anything?

There are no costs to you for being in this research study.

How will you keep my information private?

Information we learn about you in this research study will be handled in a confidential manner, within the limits of the law and will be limited to people who have a need to review this information. All interview data and analyses will be completed on password protected documents and databases. Each participant will be assigned unique code to utilize for coding interview data. Participant names or site locations will not be included in any documents. Your name will not be written on any documents nor will your name be stored during at any point during this study. Your right to privacy will be maintained always.

This data will be available to the researcher, the Institutional Review Board and other representatives of this institution, and any regulatory and granting agencies (if applicable). If we publish the results of the study in a scientific journal or book, we will not identify you. All confidential data will be kept securely on a password protected computer in password protected files. All data will be kept for 36 months and destroyed after that time by permanently deleting all documents and databases from the password protected computer they were stored on.

Whom can I contact if I have questions, concerns, comments, or complaints?

If you have questions now, feel free to ask us. If you have more questions about the research, your research rights, or have a research-related injury, please contact:

Primary contact:
Sophia Lafayette, B.A.S., M.Ed., Ed.S can be reached at 248-906-8009 or by email at sl1203@mynsu.nova.edu

If primary is not available, contact:
Charles Schlosser, PhD can be reached at 954-262-5639

Research Participants Rights
For questions/concerns regarding your research rights, please contact:

Institutional Review Board
Nova Southeastern University
(954) 262-5369 / Toll Free: 1-866-499-0790
IRB@nova.edu

You may also visit the NSU IRB website at www.nova.edu/irb/information-for-research-participants for further information regarding your rights as a research participant.

All space below was intentionally left blank.

Research Consent and Authorization Signature Section

Voluntary Participation - You are not required to participate in this study. In the event you do participate, you may leave this research study at any time. If you leave this research study before it is completed, there will be no penalty to you, and you will not lose any benefits to which you are entitled.

If you agree to participate in this research study, sign this section. You will be given a signed copy of this form to keep. You do not waive any of your legal rights by signing this form.

SIGN THIS FORM ONLY IF THE STATEMENTS LISTED BELOW ARE TRUE:

- You have read the above information.
- Your questions have been answered to your satisfaction about the research.

Adult Signature Section

I have voluntarily decided to take part in this research study.

Printed Name of Participant	Signature of Participant	Date
Printed Name of Person Obtaining Consent and Authorization	Signature of Person Obtaining Consent and Authorization	Date

Appendix C

Interview Protocol

Understanding BYOD Implementation Experiences of School Teachers and Administrators: A Phenomenological Perspective

Interview Protocol

Pre-Statement: Please note that when referring to Bring Your Own Device or BYOD in study questions, this refers to allowing students to utilize their personal communication devices in school including but not limited to laptops, iPads, and smartphones.

Part 1: Demographic Information

In this study, you will be identified with a code and your identity will remain anonymous. I will only gather demographic information from the next 6 questions:

1. What is your gender? ( ) Female ( ) Male ( ) Prefer not to answer
2. What is your current position? ( ) Classroom Teacher ( ) Administrator
3. What grade(s) do you teach or serve as an administrator for: _____
4. If teacher, what subject(s) do you teach: _____
5. If an administrator, what responsibilities do you have: _____
6. How many years of experience do you have in your current position? _____
7. How many years of experience do you have implementing, monitoring or supporting a bring your own device program in your school? Please note that when referring to BYOD this means allowing students to utilize their personal communication devices in school including but not limited to laptops, iPads, and smartphones _____

Part 2: Experience Questions - Teachers

Please describe your experiences, to the best of your ability, related to the following set of questions:

1. Why or how did you initially become involved in implementing a bring your own device program in your classroom?
2. A. What specific bring your own devices have students used in your classroom and which of these devices do you students primarily bringing and using in the classroom?

   B. Describe your experiences around students use of these devices in your classroom for both academic and non-academic reasons.
3. What experiences have you had regarding the use of social media applications for both academic and non-academic reasons by you or students in your classroom?
4. How has school policy impacted any of your experiences with bring your own device implementation in your classroom?
5. Please describe any experiences you have had with school administration in relationship to:

   A. Implementation

   B. Support, or

   C. Monitoring of your school's bring your own device program?
6. Please describe any experiences you have had in terms of professional development, to help support your implementation of the bring your own device program in your classroom:

7. In question 1, I asked you why you initially became involved in implementing a BYOD program. Since you first started, are there any experiences you have subsequently had that would change these reasons? If so, please discuss those experiences.
8. How do you think the BYOD program has impacted student learning? Please provide examples or experiences that support this thinking.
9. After having these experiences with BYOD, is there anything you would now recommend changing in regard to the implementation, support, or monitoring of BYOD in your school?
10. Do you have any additional comments you want to share, that you think could be beneficial to this study?

Part 2: Experience Questions - Administrators

Please describe your experiences, to the best of your ability, related to the following set of questions:

1. Why or how did you initially become involved in implementing a bring your own device program in your school?
2. A. What specific bring your own devices have students used in classrooms throughout the school, and which of these devices have you primarily witnessed students using.

   B. Describe your experiences around students use of these devices including both academic and non-academic use.

3. Please share any experiences you have had regarding the use of social media applications in the school for both academic and non-academic reasons?
4. Please discuss how school policy has impacted any of your experiences with bring your own device implementation in your school?
5. Please describe any experiences you have had with teachers in relationship to the implementation, support, or monitoring of your school's bring your own device program?
6. Please describe any experiences you have had with students in relationship to the implementation, support, or monitoring of your school's bring your own device program?
7. Please describe any experiences you have had in terms of professional development, to help support the implementation of the bring your own device program in your school:
8. In question 1, I asked you why you initially became involved in implementing a BYOD program, since you first started, are there any experiences you have subsequently had that would change these reasons? If so, can you discuss those experiences?
9. After having these experiences with BYOD, is there anything you would now recommend changing in regard to the implementation, support, or monitoring of BYOD in your school?
10. How do you think the BYOD program has impacted student learning? Please provide examples or experiences that support this thinking.

11. Do you have any additional comments you want to share, that you think could be beneficial to this study?

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Appendix D

Field Notes Form

Understanding BYOD Implementation Experiences of School Teachers and Administrators: A Phenomenological Perspective

Field Notes Form

Participant Code: _____ **Date of Interview: _____**

Field Notes	
Theoretical Notes Derive meaning while thinking about or reflecting on experiences	
Methodological Notes Reminders, instructions or critiques to oneself on the interview process.	
Analytical Memos End-of-a-field-day summary or progress reviews	

Appendix E

Michigan Schools BYOD and Technology Policy Information

Sample of South East Michigan County Schools BYOD and Technology Policy Information

School District Name	BYOD Program	BYOD Policy	AUP Policy	Personal Communication Device (PCD) Policy	PCD Policy Language includes "educational use of device"
Anchor Bay	No	No	Yes	No	n/a
Armada	Yes	No	Yes	Yes	No
Avondale	No	No	Yes	Yes	Yes
Berkley	No	No	Yes	Yes	No
Birmingham	Yes	No	Yes	Yes	Yes
Bloomfield Hills	Yes	No	Yes	No	Yes
Brandon	No	No	Yes	Yes	Yes
Chippewa Valley	No	No	Yes	Yes	No
Clarenceville	No	No	Yes	Yes	Yes
Clarkston	No	No	Yes	Yes	Yes
Clawson	No	No	Yes	Yes	Yes
Dearborn	No	No	Yes	Yes	No
Detroit	No	No	Yes	No	n/a
Farmington	No	No	Yes	Yes	Yes
Ferndale	No	No	Yes	Yes	Yes
Fraser	Yes	Yes	Yes	Yes	No
Grosse Pointe	No	No	Yes	Yes	No
Hazel Park	No	No	Yes	No	No

School District Name	BYOD Program	BYOD Policy	AUP Policy	Personal Communication Device (PCD) Policy	PCD Policy Language includes "educational use of device"
Holly	No	No	Yes	Yes	Yes
Huron Valley	Yes	No	Yes	No	Yes
Lake Orion	No	No	Yes	Yes	Yes
Lamphere	No	No	Yes	No	Yes*
L'Anse Creuse	No	No	Yes	Yes	No
Livonia	No	No	Yes	Yes	Yes
Madison	No	No	No	No	No
New Haven	No	No	Yes	Yes	No
Northville	Yes	Yes	Yes	No	n/a
Novi	No	No	Yes	Yes	Yes
Oak Park	No	No	Yes	Yes	No
Oxford	No	No	Yes	Yes	Yes
Plymouth-Canton	Yes	Yes	Yes	Yes	No
Rochester	No	No	Yes	Yes	Yes
Romeo	No	No	Yes	Yes	No
Royal Oak	Yes	No	Yes	Yes	Yes
South Lyon	No	No	Yes	Yes	Yes
Southfield	Yes	No	Yes	Yes	Yes
Troy	Yes	No	Yes	Yes	Yes
Utica	No	No	Yes	No	n/a

School District Name	BYOD Program	BYOD Policy	AUP Policy	Personal Communication Device (PCD) Policy	PCD Policy Language includes "educational use of device"
Van Buren	No	No	Yes	Yes	Yes
Walled Lake	Yes	No	Yes	No	Yes*
Warren Consolidated	No	No	Yes	Yes	Yes
Waterford	No	No	Yes	Yes	No
Wayne-Westland	No	No	Yes	No	n/a
West Bloomfield	Yes	No	Yes	Yes	Yes
Total Yes/Total	12/44	3/44	43/44	33/44	25/44

* No PCD policy, but mentions educational use of PCD in student code of conduct handbook