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The Relationship Between Digital Literacy Skills Instruction and Increased Skills Proficiency

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This is to certify that the doctoral study by

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has been found to be complete and satisfactory in all respects,
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Walden University
2020

Abstract

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MS, Full Sail University, 2010

BBA, Texas A&M University, 1995

Project Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Though today's students are considered digital natives, they lack the digital literacy skills needed to be competent and productive members of a digital society. The problem is a lack of evidence about the effectiveness of using content knowledge instruction and application experiences to develop students' digital literacy skills. The purpose of this study was to understand the relationship between content knowledge, application experiences, and knowledge and skill development for digital literacy skills. Using Marzano's art and science of teaching framework, the research questions were framed to explore the relationship between the content knowledge and application experience scores and mean growth of digital citizenship and research and information fluency skills as demonstrated on the Middle School TechLiteracy Assessment (MSTA). This correlational study used archival data from 130 eighth-grade students in Texas who were enrolled in a year-long technology applications elective class were used. Using a paired samples *t* test, the pre and post MSTA scores were analyzed. The Pearson correlation data analysis showed a statistically significant relationship between the content knowledge and assessment scores of digital citizenship and research and information fluency and no statistically significant difference between the means for digital citizenship and research and information fluency. Based on the study and data analysis results, it was determined that a customized professional development experience would help teachers develop capacity to integrate technology in their teaching practice. This capacity can improve the effectiveness of student digital literacy skills and can create positive social change in teaching and learning so students are better prepared to safely and efficiently live and interact in a digitally based society.

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Dedication

Socrates is quoted with saying, “wisdom begins in wonder,” and to those who have inspired and encouraged me to never stop wondering, I thank you.

For my family, who kept the seas calm and the shores inviting during this journey, you are the reason.

Acknowledgments

I would like to thank my husband and sons for their support throughout my educational journey. Through our many conversations you have inspired and challenged me to lead the way for change. My vision and mission are clear and thanks to you, I will strive even harder to ensure that learners of all ages never stop wondering so that their wisdom may continue to grow.

To all my professors over the years, I appreciate your guidance, sharing of knowledge, and mostly the way you challenged my thoughts.

To my committee, I give thanks for helping me navigate the doctoral process to a successful completion.

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Section 1: The Problem

The academic environment and personal lives of students have become more entwined with technology as students use technology to enhance their learning experiences and engage socially. The International Society for Technology in Education (ISTE) recognized the value of digital literacy skills for students when they published initial standards in 1998 that focused on learning how to use technology (ISTE, 2016). As technology advanced and the use of technology changed, ISTE recognized the need for student digital literacy skills to also advance and change. In 2007, the student standards were modified to include using technology to learn, and in 2016 technology was recognized as a way to transform learning (ISTE, 2016). The ISTE standards for students' digital literacy skills set an expectation for providing students with knowledge and skills that will prepare them to become safe and responsible consumers and producers in a digital society. Ensuring that students receive instruction and deepening learning experiences through practice and application experiences related to digital literacy skills helps set the foundation for academic and personal growth.

In Section 1, I discuss the local problem that was the focus of this research study. I also present the rationale for studying this topic, define key terms, and identify the significance of the study and research questions. Next, I provide a synthesis of the extant research related to the topic and conclude the section with a discussion of the implications and a summary of the information presented.

The Local Problem

There is a problem in the Texas education system that was identified during a conversation I had in 2016 with an instructional technology specialist in a rural Texas school district where she discussed there being a lack of evidence about the effectiveness of using strategic digital literacy skills instruction and application experiences for students to develop increased skill proficiencies in digital citizenship and research and information fluency. The digital citizenship proficiency standards, as established by the Texas Education Agency (TEA) in the Texas Essential Knowledge and Skills for Technology Applications (TA-TEKS), maintains that students will practice "safe, responsible, legal and ethical behavior while using technology tools and resources" (TEA, 2011a). The research and information fluency standards set the expectation that students will acquire, analyze, and manage content from digital resources (TEA, 2011a). Student performance regarding standards proficiency in digital citizenship and research and information fluency, as measured by the Texas Computer Education Association (TCEA) Middle School TechLiteracy Assessment (MSTA), show that eighth-grade students across Texas have remained at the below basic level since 2012 in digital citizenship and research and information fluency (TCEA, 2012, 2013, 2014, 2015, 2016).

The need for digital literacy skills preparedness exists on a global scale and affects all ages because "no one is born digitally literate" (Becker, 2018, p. 2), and thus, these cognitive and digital skills must be learned. Hobbs (2017) stated that it is critical for teachers to be equipped with digital literacy skills if they are to be expected to ensure students learn those same skills, which allows for teaching, learning and productivity to

occur through a variety of technology tools (p. 7). Districts often focus on building infrastructure for technology use but must also place emphasis on digital skills development for teachers and students to promote a digital transformation on campuses and district wide (Chetty et al., 2017). Bialik and Fadel (2015) stated that passively learning concepts without skills being applied, leads to learning at a superficial level which does not prepare students to be able to transfer their knowledge to new environments (p. 1). Students will be better prepared to succeed in school, work, and life if they are provided with knowledge, skills, and experience in the content area along with effective communication and critical thinking skills (Partnership for 21st Century Learning, 2015). As the field of education continues to move towards incorporating technology devices for teaching and learning, so must educators prepare students with the technical and cognitive skills necessary to be successful in this type of environment. More research is needed surrounding the best way to build these technical and cognitive skills.

Rationale

In 2011, the Texas Administrative Code and the State Board of Education (SBOE) established student proficiency expectations through the TA-TEKS. The TA-TEKS standards (see Table 1) and state adopted materials for teaching these standards were implemented during the 2012–2013 school year (TEA, 2011a).

Table 1

Texas Essential Knowledge and Skills for Technology Applications, Middle School

Strand Name	Description
Creativity and innovation	The student uses creative thinking and innovative processes to construct knowledge, generate new ideas, and create products.
Communication and collaboration	The student collaborates and communicates both locally and globally to reinforce and promote learning
Research and information fluency	The student acquires, analyzes, and manages content from digital resources.
Critical thinking, problem solving, and decision-making	The student makes informed decisions by applying critical-thinking and problem-solving skills.
Digital citizenship	The student practices safe, responsible, legal, and ethical behavior while using technology tools and resources.
Technology operations and concepts	The student demonstrates a thorough understanding of technology concepts, systems, and operations.

The Texas TA-TEKS curricular standards were updated to further enhance the ISTE technology standards established in 2007 with the intent of better preparing students with the 21st-century skills needed for college and career (Pacific Standard, 2015). The U.S. Department of Education (2015) recognized that students were facing higher expectations in the real world of college and careers when it established the original Elementary and Secondary Education Act in 1965 to set forth guidelines for ensuring student preparedness by aligning state and school standards with the higher expectations. The law has been amended over time as the needs of students, college, and career have changed, leading to the 2015 amendment, the Every Student Succeeds Act, passed in an effort to continue to establish updated goals for preparing students to

succeed in college and careers (U.S. Department of Education, 2015). Because standards are the goals that determine what students should learn, the curriculum is what districts and schools use to determine how and what to teach students to meet those goals. Students must have more than a basic skills level and be held to high academic standards to be prepared to compete in a digital skill-enhanced world. In the present study, I investigated whether content knowledge and application experiences provide students with the skills needed to integrate new knowledge with foundational knowledge to develop specific proficiencies in digital literacy. The results of this study could help determine if students need strategic digital literacy skills instruction to meet the high academic standards necessary for success in college and careers.

During a conversation with an instructional technology specialist in a small Texas school district on February 5, 2016, she expressed concern about students receiving the needed knowledge and skills to prepare them to safely use the classroom and individual devices provided by the school district. The deputy superintendent of academic achievement in a large Texas school district discussed a concern that students do not come to school prepared to safely and effectively use technology; yet, the students are provided with devices by the district for instructional purposes. To better prepare students to become productive citizens and successful consumers of technology, this deputy superintendent said on April 3, 2014 that she wanted to ensure that teachers are given curriculum materials that provide students with the digital literacy skills they need to be successful in and out of school. In 2018, a professor of marketing and management from Concordia University expressed similar concerns at the collegiate level in that students

have a sophisticated use of social media; but a decline in the ability to conduct valid searches and think critically about the information they find. The professor of marketing and management further explained that students appear to increasingly use social media instead of using vetted sources unless they are specifically instructed to for an assignment. The concerns expressed by the instructional technology specialist, the deputy superintendent, and the professor of marketing and management all related to the need for students to gain digital literacy skills through content knowledge and application experiences. Iordache, Mariën, and Baelden (2017) referenced that digital skills are becoming a "key element on the agenda of scholars, practitioners and policymakers worldwide in order to ensure citizens' ability to fully participate in today's increasingly digitized society," showing that there is a concern about the need for digital literacy skills on a global scale (p. 6). To determine ways that students could develop increased digital literacy skill proficiencies, the purpose of this study became examining the effectiveness of using strategic content knowledge instruction and application experiences to teach digital citizenship and research and information fluency.

Definition of Terms

Blended learning model: An education model that allows for both an online component and an in-person component of instruction where the modalities integrate throughout the learning experience (Christensen Institute, 2018).

Consumer science courses: A social discipline that focuses on the interaction between people and the environment (Study.com, 2017).

Digital citizenship: The habits, actions, and consumption patterns of people that affect digital content and communities (Heick, 2017).

Digital literacy: The use of cognitive and technical skills in communicating information and finding, evaluating, and creating information while using both information and communication technologies (Heitin, 2016).

Every Student Succeeds Act: The United States' national education law and longstanding commitment to equal opportunity for all students (U.S. Department of Education, 2015).

In-service teacher: Someone that has a teaching certification or is already teaching in a classroom (Koellner & Greenblatt, 2018).

Instructional technology (IT): The branch of education focused on the scientific study of instructional design and development for learning experience using technology (Glavin, 2014).

International Society of Technology in Education (ISTE): A nonprofit membership association for educators focused on educational technology with a published set of education technology standards for students, educators, coaches, administrators, and computer science educators (ISTE, 2016).

Preservice teacher: Someone in the process of preparing to become a teacher (Russell & Martin, 2017).

Professional learning community (PLC): Educators who form a group that focuses on collaboratively learning so as to improve their teaching practice (Knight & Ricketts, 2015).

Research and information fluency: The skills used to search for information and create useful knowledge to effectively solve real-world problems (Global Digital Citizen Foundation, 2018).

State Board of Education (SBOE): The Texas SBOE sets policies and standards for Texas public schools (TEA, 2018).

Texas Administrative Code: A compilation of the rules of all state agencies in Texas (Texas Secretary of State, n.d.).

Texas Computer Education Association (TCEA): A member organization that promotes the advancement of technology in education (TCEA, 2018).

Texas Education Agency (TEA): A government branch, in Texas, responsible for overseeing public education at both the primary and secondary levels (Tamez, 2018).

Texas Essential Knowledge and Skills for Technology Applications (TA-TEKS): The Texas SBOE adopted standards for student technology applications knowledge and skills (TEA, 2015).

Significance of the Study

The findings of this study provide Texas school districts with an analysis of how providing content knowledge instruction and application experiences relate to increased proficiency in digital citizenship and research and information fluency. The results of this study can be used to help Texas school districts evaluate the gap in practice in their district concerning why eighth-grade students are not meeting the expected levels of TA-TEKS related to digital citizenship and research and information fluency as established by the TEA. Students in the local setting would then be better prepared to safely and

effectively use the technology devices provided to them as part of their academic experience. The results could also be applied beyond the Texas school system because students worldwide need to effectively apply digital literacy skills for school, career, and life (see Iordache et al., 2017). The findings of this study can help determine how providing students with content knowledge and application experiences for digital literacy skills affects their skills application. The data can be used to help implement a positive social change ensuring that students are prepared to communicate, create, and evaluate information in a technology-infused world both safely and effectively.

Research Questions and Hypotheses

This study was intended to determine if a correlation existed between the content knowledge and application experience scores and growth in student skill proficiency as demonstrated through the TCEA MSTA pre- and posttest and the scores on content knowledge and application experiences. The independent variables in the study were the content knowledge scores from the learning experiences and the application experience scores from completed student projects. The dependent variables were assessment scores from the digital citizenship and the research and information fluency categories. Marzano's (2017) theory of the art and science of teaching, which incorporates a three-step process of using direct instruction, practice, and deepening lessons and knowledge application, was the method used to deliver the content knowledge and application experiences. The study was guided by the following six primary research questions (RQs) and hypotheses (*H*).

RQ1a: What is the relationship between the content knowledge scores and eighth-grade student assessment scores in digital citizenship skills on the MSTA posttest?

$H_0$1a: There is no statistically significant relationship between the content knowledge scores and eighth-grade student assessment scores in digital citizenship skills on the MSTA posttest.

H_a1a: There is a statistically significant relationship between the content knowledge scores and eighth-grade student assessment scores in digital citizenship skills on the MSTA posttest.

RQ1b: What is the relationship between the application experience project scores and eighth-grade student assessment scores in digital citizenship skills on the MSTA posttest?

$H_0$1b: There is no statistically significant relationship between the application experience project scores and eighth-grade student assessment scores in digital citizenship skills on the MSTA posttest.

H_a1b: There is a statistically significant relationship between the application experience project scores and eighth-grade student assessment scores in digital citizenship skills on the MSTA posttest.

RQ2a: What is the relationship between the content knowledge scores and eighth-grade student assessment scores in research and information fluency skills on the MSTA posttest?

$H_0$2a: There is no statistically significant relationship between the content knowledge scores and eighth-grade student assessment scores in research and information fluency skills on the MSTA posttest.

H_a2a: There is a statistically significant relationship between the content knowledge scores and eighth-grade student assessment scores in research and information fluency skills on the MSTA posttest.

RQ2b: What is the relationship between the application experience project scores and eighth-grade student assessment scores in research and information fluency skills on the MSTA posttest?

$H_0$2b: There is no statistically significant relationship between the application experience project scores and eighth-grade student assessment scores in research and information fluency skills on the MSTA posttest.

H_a2b: There is a statistically significant relationship between the application experience project scores and eighth-grade student assessment scores in research and information fluency skills on the MSTA posttest.

RQ3: Is there a significant difference between the mean digital citizenship skills pre- and post-MSTA scores?

$H_0$3: There is no statistically significant difference between the mean digital citizenship skills pre- and post-MSTA scores.

H_a3: There is a statistically significant difference between the mean digital citizenship skills pre- and post-MSTA scores.

RQ4: Is there a significant difference between the mean research and information fluency skills pre- and post-MSTA scores?

$H_0$4: There is no statistically significant difference between the mean research and information fluency skills pre- and post-MSTA scores.

H_a4: There is a statistically significant difference between the mean research and information fluency skills pre-and post-MSTA scores.

Review of the Literature

Digital literacy contains a broad range of skills related to the use of technology. My research for the study began with a direct search for the field of education's defined meaning of *digital literacy skills*, *digital citizenship* and *research and information fluency*. While evaluating resources for each topic, it became evident that digital literacy skills are defined differently based on the entity providing the definition. In previous research studies and articles, there was a broadening of the research to include legislation and laws affecting each concept along with organizations that create, and support standards related to digital literacy competencies. Based on this information, I expanded the research to include the *value and importance of digital literacy skills instruction*, *Marzano's instructional framework*, suggestions for *digital literacy skills development*, *research and information fluency*, *digital citizenship* and various *strategic instructional strategies for teaching and learning*. From this search, I identified 26 sources published between 2015 and 2019. Two additional sources were used that were published in 2012 and 2014 to establish a foundation for additional information to build upon.

Importance of Digital Literacy Skills Instruction

As education moves more towards using technology in the classroom and preparing all students for success beyond the classroom, it has become more important to evaluate the *how*, *why*, and *when* of ensuring students have digital literacy skills. Fidalgo, Santos, and Hill (2016) established that proficiency in the use of digital technologies was a critical skill in the 21st century and was necessary to prepare students for work beyond the classroom. Gerben (2017) investigated the perceptions of teachers on the importance of digital literacy skills instruction and determined that ethical use of the Internet and developing questions for research were necessary skills but were not skills that were directly taught. Williams (2015) examined the perceptions of students and employers and found that soft skills and technical skills are complementary and should be considered job readiness skills.

Ascione (2015) noted that digital literacy helps students know where to find information and how to use it and that not having these skills puts children at risk when it comes to choosing trusted websites. Students who do not understand how to identify an author or evaluate their credentials run the risk of not understanding the bias that may appear in what they read online (Ascione, 2015). In addition to evaluating online information for bias, students need to be able to evaluate to ensure the information they are reading is accurate (Ascione, 2015). As students rely more on the Internet to find information that effects their lives, they need to have critical digital literacies that help them ensure the information they are accessing was written by a credible source. St. Jean, Greene Taylor, Kodama, and Subramaniam (2017) found that students are increasingly

using the Internet to search for information related to health issues, and they need digital literacy skills to find and evaluate relevant and credible online health information.

Theoretical Foundation

Marzano's (2017) art and science of teaching framework focuses on the use of direct instruction, practice, and deepening learning opportunities followed by application experiences to ensure students not only gain content knowledge but are able to apply what they have learned. The art and science of teaching framework provides teachers with a model that guides the student learning and teacher evaluation process. Marzano's framework directly relates to the learning method in the current study for how to teach digital citizenship and research and information fluency skills for student knowledge and application growth.

Marzano's (2017) art and science of teaching instructional model was designed as an enhancement from the original Marzano nine effective instructional strategies:

1. Identifying similarities and differences;
2. Summarizing and note taking;
3. Reinforcing effort and providing recognition;
4. Homework and practice;
5. Nonlinguistic representations;
6. Cooperative learning;
7. Seeing objectives and providing feedback;
8. Cues, question, and advance organizers; and
9. Generating and testing hypotheses (Francis, 2012).

These instructional strategies offered an initial path for teachers to follow for engaging students in the learning process. Francis (2012) determined that by using the Marzano nine effective instructional strategies as a scaffold for organizing and implementing curriculum and instruction, technology could be used effectively to engage and instruct students in their learning process. Because the art and science of teaching framework was built from the original Marzano 9 effective instructional strategies, the aspect of using technology for direct instruction, practice, and deepening learning opportunities followed by application experiences, based on Francis's work, relates to the current study for ensuring that technology can engage and enhance the student learning experience. Thomas and Green (2015) conducted a study to evaluate how the use of Marzano's instructional strategies affected academic achievement in students and determined that teachers were situational in how they implemented the strategies but was not conclusive on the effect the strategies had on student achievement. Thomas and Green found that there was still a missing piece where student needs must be taken into consideration during the instructional process. Using data to drive or enhance decisions with the instruction provided to students can account for student needs.

Review of the Broader Problem

Regardless of the subject area, teachers may receive curriculum materials for instructional purposes, but they do not always receive the training and support needed for implementing the curriculum materials with their student population. When curriculum materials are not provided by the school system, teachers must find resources and materials to use for instruction or may not provide the instruction. Gerben (2017)

confirmed that though educators have a collective responsibility to teach students how to be responsible in a digital world, they need guidance on how to directly teach the related skills. By providing teachers with curriculum materials that engage students in the learning process and support teachers' needs for implementation, digital literacy skills are more likely to be included in the classroom learning experience. Saxby (2018) identified that teaching digital literacy skills in the context of the subject area that the student is working in is an important aspect to help students understand why these skills are valuable. Students of all abilities will be expected to interact with technology on some level as both students and productive members of society. The findings of Gerben and Saxby support those of Cihak, Wright, Smith, McMahon, and Kraiss (2015) in confirming the importance of teaching digital literacy skills to students in that all students can acquire and maintain functional digital literacy skills regardless of their intellectual abilities.

Digital literacy skills development. Students today are considered digital natives because they have grown up with technology around them in their everyday lives. Though students have access to technology and are familiar with a variety of devices, they do not necessarily have the skills needed to productively use the technology. Yamila and El-Khayat (2016) determined that tech savviness does not ensure that students have the skills they need to be successful at school and work in the future. Raish and Rimland (2016) concluded that technology skills will help prepare students for the workforce because employers expect these skills. Though Yamila and El-Khayat and Raish and Rimland have established the need for the skills, Bali (2016) explained that a focus on

digital literacy should not only be about the technology skills but also about the use of those skills so that students can apply what they learn.

When students know how to use the technology and then can use digital literacy skills to create, evaluate, and share, they can become productive members of the digital society they live in and evolve as the technology does. Students need to develop and apply their digital literacy skills during school curricula so that they are prepared for the next level because digital literacy skills must be learned early and applied in a real-world type setting while still in an observed area for evaluation of need and further instruction (Saux & Cevasco, 2019). Iordache et al. (2017) recognized that developing digital skills, literacies, and competencies has become increasingly important worldwide because stakeholders use various models as the basis for their policies. By identifying a specific set of essential digital literacy skills that could be adopted worldwide as a foundation for the education community to build on, consistent educational resources could be identified to meet the needs of learners and teachers. Though consistent educational resources for providing digital literacy skills instruction are valuable, Chetty et al. (2017) additionally concluded that digital literacy skills must evolve over time and in alignment with technological innovations. Digital literacy skills development is the overarching term related to any skills students gain that are related to the use of technology (Heitin, 2016). The present study included a focus on only two of the skill sets that appear as part of digital literacy: research and information fluency and digital citizenship.

Research and information fluency. Students can conduct searches through a Web browser and find more information than they may expect, but conducting research

and understanding the results of what they find requires research and information fluency skills. D'Couto and Rosenhan (2015) concluded that students are influenced by academic and nonacademic factors as they conduct Internet-based research, which reinforces the need for teaching the skills and not allowing students to rely on what they think is the best way to conduct research. Schmidt Hanbidge, Sanderson, and Tin (2016) determined that information literacy skills were valuable, but the skills were not integrated into the classroom curriculum, which limited the opportunities to teach the skills. Information literacy should be considered part of the core curriculum content because it is crucial for students to understand how to conduct research and evaluate the information they find. Junisbai, Lowe, and Tagge (2016) found that students need instruction on research skills and need to have hands-on learning sessions but did not evaluate a connection to digital versus human interaction as a way for students to learn and apply information literacy. Saxby (2018) concluded that for students to have structure to build on when conducting research, they needed direct instruction and inquiry-based options when learning how to search, scan, find, and evaluate information.

Research and information fluency are literacy skills that cross the boundary between print and digital. The skills are foundational to understanding how to find and analyze information. These skills are applicable to the current study as skills that are not inherently known but ones that must be taught, learned, and practiced for success.

Digital citizenship. Digital citizenship is a skill that students must learn and exhibit as part of a digital society. Digital citizenship is a tool that helps students integrate knowledge, skills, attitudes, and values and must stay in line with living in the digital age

(Dedebali & Dasdemir, 2019). It is important for students to gain digital citizenship skills while they were in school because they are likely to develop inappropriate skills otherwise (Ata & Yildirim, 2019). While the need for digital citizenship skills is apparent and legislation is often passed to support the need, Phillips and Lee (2019) found that the enactment of legislation to require that digital citizenship instruction was to be offered did not guarantee that who should teach it or when it should be taught would be determined. Godfrey (2016) suggested that educators have a collective responsibility to teach what it means to be responsible in the virtual world as a digital citizen through the family and through consumer science courses because these focus on the interactions of people and their environment. Based on the findings of Dedebali and Dasdemir, Ata and Yildirim, and Godfrey, the understanding that digital citizenship is an important skill exists; however, teachers' support for, confidence level in teaching, and means to teach those skills are of concern.

Digital citizenship is a foundational skill in digital literacy because students need the knowledge and skills to be positive citizens in a digital environment. Isman and Canan Gungoren (2014) found that though citizenship is taught to students, the digital aspect of being a good citizen varies in the environment where the skills must be applied. By teaching students to be a good citizen in a face-to-face environment, the foundation is being set for them to transition to a digital environment (Isman & Canan Gungoren, 2014). Students must be taught, learn, and be able to apply digital citizenship skills to be productive members of the current and future society. In this study, I evaluated student

growth and abilities through the experience of digital instruction and the application of digital citizenship skills.

Strategic instructional strategies. Ensuring that students have the necessary digital literacy skills requires both cognitive and technical aspects (Becker, 2018). Though the importance and the need exist for teaching digital literacy skills, teachers still find it difficult to teach digital literacy skills. Opeyemi et al. (2019) studied the barriers to integrating technology into the classroom and found that a lack of adequate and well-trained personnel caused instruction to not be equitable for all students. There are a variety of teaching models, based on research, which have been implemented throughout the education system for teaching core subject areas, but not for teaching digital literacy skills. Sondergeld (2014) concluded that data is important in the instructional process as is the need for teachers to have the skills to develop and use quality materials, for curriculum and assessment, to prepare students for college and future workforce needs.

Strategic instructional strategies provide educators with a standard of teaching that allows for meeting the needs of the variety of learners that they may encounter in the classroom, whether brick and mortar or in a digital environment. By evaluating the effectiveness of content knowledge and application experiences in the teaching and learning of digital literacy skills, the study could provide a better understanding to help prepare teachers to meet the needs of students using digital as a tool for learning or producing.

The major findings from the review include a reaffirmation of the need for digital literacy skills instruction and specifically digital citizenship and research and information

fluency as identified in the local problem. The need to evaluate best practices for delivering digital literacy instruction and the value that instruction has for students supports the need to determine the apparent effectiveness of content knowledge instruction and application experiences as an approach to students developing increased skill proficiencies in digital citizenship and research and information fluency.

Implications

The implications of the literature review establish that digital literacy skills are necessary for preparing students to be productive members of a digital society, but teachers and administrators do not have the resources and confidence to teach these skills. The concepts are included in established standards for student learning but are not seen as critical skills as the accountability aspect is not evident. Further investigation is needed to identify both a method for establishing accountability measures and a method of teaching and learning that engages students in gaining digital literacy skills in a way that prepares them to apply these skills in any situation. In establishing accountability measures, it will be important to include curriculum materials and professional learning opportunities to ensure that teachers have the tools necessary to meet the needs of their students. The tools and materials for teaching and learning should include professional development and ongoing support for the implementation of these tools and materials. Findings from the present study influenced the design of a professional learning experience which includes modeling how to provide content knowledge and application experiences for digital literacy skills instruction for teachers through mentoring by instructional coaches. This includes training and support materials to assist the instructional coach mentors as they

design and implement digital literacy skills instruction experiences with their teachers. Having a model that includes accountability measures to ensure that the curriculum materials are being implemented equitably across all students was a crucial aspect in creating the professional development experience.

Summary

There are many organizations that have identified what the essential digital literacy skills are that students must have to be productive members of a digital society. All related organizations and legislative measures include guidelines for how students should be able to interact with technology and in some cases curriculum materials have been either approved or provided. Students must be taught the skills they need to be digital citizens, to conduct research, and to become information fluent to be successful in both school and future work environments. Using established strategic instructional methods for students to learn and apply what they have learned can ensure that students are prepared for the digital environment in which they live. In this study, I examined the relationship between digital literacy skills instruction and students' increased skills proficiency by evaluating the effectiveness of the combination of content knowledge instruction and application experiences in digital citizenship and research and information fluency skills. I discuss the methodology used to conduct the study and the findings in Section 2; the project description, plan, and evaluation in Section 3; and study reflections in Section 4.

Section 2: The Methodology

Research Design and Approach

In this study, I employed a quantitative, correlational approach that included the analysis of archival data to determine the correlation between content knowledge and application experience scores as they related to students' demonstrated ability in digital citizenship and research and information fluency assessment scores by the end of eighth grade. Using the correlational design in the study allowed me to determine the degree to which the variables were related to see if they influenced each other (see Creswell & Guetterman, 2019).

Setting and Sample

In this study, I used historical data from a small school district in Texas where technology applications classes are an elective for eighth-grade students. The representative sample method was used when determining the sample because the students were all from one school district. The sample included approximately 130 eighth-grade students out of the entire eighth-grade population of 187 students. I conducted a power analysis for a Pearson correlation and a paired samples *t* test using G*Power to determine a sufficient sample size with an alpha of .05, power of .95, small effect size ($p = .05$), and two tails (see Faul, Erdfelder, Lang, & Buchner, 2007). The calculation resulted in a minimum sample size for both tests of 126. Because the focus of this study was to evaluate the statistically significant relationship between content knowledge and application experience project scores and assessment scores related to digital literacy skills, the sample consisted of students who were enrolled in the

technology applications class. The technology applications class was open to all eighth-grade students in the school with no prerequisite requirements, so any student was able to enroll in the class as an elective. The proficiencies of digital citizenship and research and information fluency were the learning concepts used during the study.

Instrumentation and Materials

Assessment Data: Dependent Variables

In this study, I used the quantitative approach to evaluate growth levels in students based on archival assessment data from the 2018–2019 MSTA and historical gradebook data from class assignments during the same time frame. The MSTA is a psychometrically validated online and timed assessment created by Learning.com (2006). During the psychometric validation of the assessment, Wiley, Sireci, and Patelis (2006) evaluated 4,000 assessment results from two groups of students and determined the reliability coefficients to be 0.860 for Group 1 and 0.858 for Group 2. The assessment was established to be valid based on the mean biserial for Group 1 being .36 and for Group 2 being .38. Prior to the evaluation, Wiley et al. established that the minimum biserial for questions should be .20 to be considered valid. The data used in this study were from the MSTA report that provides data including a breakdown of individual student, school, and district level mastery of each of the identified TA-TEKS. The digital literacy skills of digital citizenship and research and information fluency are separately identified in alignment with the state standards for technology applications. The assessment proficiency report includes each student's scale score and compares it to the established proficiency for each standard. The MSTA includes interactive and

performance-based questions to better evaluate each student's knowledge and skill application (Wiley et al., 2006).

Content Knowledge and Application Experience Measures: Independent Variables

The data used in this study related to student content knowledge and application experience project scores included auto-scored items and items scored by the teacher via a digitally interactive rubric to maintain equity and consistency. The auto-scored, interactive, content knowledge lessons used for direct instruction include animation, closed captioning, audio, and text reinforcement for key concepts being taught. These lessons provide direct instruction to students based on the identified concept area for the lesson and use an animated onscreen character to deliver instruction. After the direct instruction for a concept, the lessons include interactive application experiences to allow students to practice what they are learning. These interactive, performance-based questions are auto-scored and automatically appear in the teacher's gradebook. Because these are formative assessments that check for understanding, students are given three chances to demonstrate their learning. Each wrong answer provides encouragement and instruction to help the students learn and demonstrate the correct response. If students are not able to demonstrate the concept, they are shown how to demonstrate the concept with a positive response. Correctly demonstrating the concept at any time rewards the student with a positive response.

The application experience project provides students with the opportunity to demonstrate their knowledge and skills in a real-world-like application exercise where they create a product to demonstrate their learning. The application experience projects

that students complete are directly related to the concept taught during the interactive lesson, which provides the content knowledge and interactive, performance-based questions.

Data Collection and Analysis

The focus of this study was the demonstration of digital literacy skills related to digital citizenship and research and information fluency. I collected the historical data from the 2018–2019 MSTA pre- and posttest administrations from assessment score reports and the content knowledge and application experience grades from historical gradebook data from the same year. The pretest MSTA was administered during the first week of the class, and the posttest was administered during the last week of class during the semester, with the curriculum materials used between test administrations. Scores for the content knowledge and application experiences were from historical gradebook data based on assignments in an online learning platform. The data related to the assessments and curriculum materials were provided by Learning.com based on a written request that included specific data needs. I used descriptive analysis on the assessment content knowledge scores and application experience scores data as part of the initial step in data analysis. This initial analysis provided a solid foundation for further data analysis to determine if there was growth in the areas of digital citizenship and research and information fluency between the MSTA pre- and posttest administrations as well as to evaluate if there was a correlation between the data gathered through the gradebook for the student content knowledge and application experience scores as they related to the MSTA posttest.

The system for scoring the assessments and the interactive content knowledge application experiences uses a preprogrammed algorithm based on auto-scoring of the questions. The use of the pre-programmed algorithm ensures that all content knowledge and application experiences are scored in a reliable manner. The scoring for the application experience projects includes a digitally interactive rubric for assessing student projects. The psychometrically validated assessment, with a reliability coefficient of 0.860 (Wiley et al., 2006), provided auto-generated reports for comparing data at the student level to evaluate growth in the identified digital literacy skills. I used historic gradebook data to determine student success levels during the content knowledge and application experiences prior to evaluating the rubric data based on the application experience projects.

I was provided with the historical data gathered for the MSTA and launch data for the interactive content knowledge lessons and application experiences through an initial e-mail request to the Learning.com CEO. Once approval was received to have access to the data, a referral to the manager for data and analytics was provided for me to request data and reports. Parameters were provided for the time frame, curriculum item, and assessment data needed with a request that the data be from Texas and returned with no identifying district, campus, or student information.

After I gathered the data for the study, the data sets were grouped by categories for the content knowledge scores, application experience project scores, and scores from the pre- and posttests for the MSTA. I further grouped the data by the concept area under study, digital citizenship and research and information fluency. Because there was no

specific order for the digital literacy skills concept areas under study, the data from the content knowledge scores and application experience project scores were nominal variables. The variable data in each group were further evaluated to identify if there were any missing or inconsistent data.

I conducted an inferential analysis on the data sets related to content knowledge scores and the MSTA. The data sets for both digital citizenship and research and information fluency were analyzed using Statistical Package for the Social Sciences (SPSS) software to determine if a correlation existed between the content knowledge scores from digital literacy skills instruction and the posttest MSTA scores (i.e., RQ1a and RQ2a). Additionally, I planned to conduct a correlation for RQ1b and RQ2b to determine if there was a correlation between the application experience project scores and the posttest MSTA scores; however, the raw data indicated that the application experience project scores for digital citizenship and research and information fluency were a constant value and, thus, could not be considered as variables. The student skills growth data in digital citizenship and research and information fluency skills, based on the pre- and posttest MSTA scores (i.e., RQ3 and RQ4) were analyzed using a paired samples *t* test.

Assumptions, Limitations, Scope, and Delimitations

Teaching students how to remain safe and to conduct themselves in a legal and ethical way while online is expected to prepare students to understand their rights, responsibilities, and opportunities of living in a digital world. I analyzed the study data to determine student growth based on the identified standards of digital citizenship and

research and information fluency and students being provided with strategic digital literacy skills instruction and application experience projects. I assumed that students learned the digital literacy skills related to digital citizenship and research and information fluency through a blended learning model implemented in an elective class offered to eighth-grade students. An additional assumption was that all students were expected to complete all assignments.

I also assumed that the population of students completed the MSTA in a pre- and posttest setting with curriculum instruction and application experience projects being completed between each assessment. Digital citizenship and research and information fluency are 2 out of the 6 strands identified in the TA-TEKS for technology applications at the middle school level and assessed by the MSTA. One limitation of the present study is that by focusing on 2 out of the 6 strands of technology applications skills, a complete picture of student digital literacy knowledge and skills was not evaluated between the administrations of the pre- and posttest assessment.

I assumed that all students enrolled in the technology applications elective class took the course as a choice based on interest in learning digital literacy skills. The student application experience projects were graded via a digitally interactive rubric with guidelines for expectations; however, the teacher was able to manually input grades based on their own evaluation requirements without using the provided rubric, which demonstrated a weakness in the validity of that data.

The art and science of teaching framework assumes that the learning experience will include direct instruction, practice, and deepening learning opportunities followed by

application experiences to ensure students not only gain content knowledge but are able to apply what they have learned (Marzano, 2017). While evaluating the raw data, it became evident that all students did not complete all assignments, so the assumption that the framework was followed, became a limitation of the study. The application experience projects all received a score of 100 even if the student did not complete the content knowledge, direct instruction assignments. There was a gap in completion of the assignments, which resulted in a gap in application of the art and science of teaching framework.

Protection of Participants' Rights

Before gathering any data, I requested Walden University Institutional Review Board (IRB) approval to begin the study. Once IRB approval was granted through Walden University (IRB Approval No. 09-16-19-0425837), Learning.com was provided with a request for the release of data letter in which I explained the purpose of the study, the use of archival data, and how the resulting data would be used (see Creswell & Guetterman, 2019). The Learning.com CEO received the request for the release of data letter and the Data Use Agreement via e-mail. The archival data that I received from Learning.com to use for the present study did not include district, campus, or student identifiers and were pre-existing from the normal course of a school day, so no parent, guardian, or district approval was needed. The only identifier, as provided by Learning.com, was that the archival data were from a school district in Texas, were related to eighth-grade students, and included a population of 130 students out of a total of 187 students in the eighth grade. The data used were derived from a group of

participants that were part of a captive population and their name, campus, and district were kept anonymous in the collection and reporting process.

Data Analysis Results

For the present study, two types of quantitative historical data were analyzed related to the concept areas of digital citizenship and research and information fluency. Analysis for the data related to the content knowledge scores and the application experience project scores, as they relate to the MSTA posttest scores, was conducted using SPSS to run a Pearson bivariate correlation. SPSS was used to run a paired samples *t* test to analyze the MSTA pre- and posttest score means to evaluate growth.

Research Question 1

The data analysis for the digital citizenship concept area was completed to determine what relationship existed between the content knowledge learning experiences and knowledge demonstration on the posttest MSTA and what relationship existed between the application experience project learning opportunities and knowledge demonstration on the posttest MSTA. The quantitative analysis results for RQ1a and RQ1b follow:

> RQ1a: What is the relationship between the content knowledge scores and eighth-grade student assessment scores in digital citizenship skills on the MSTA posttest?
>
> RQ1b: What is the relationship between the application experience project scores and eighth-grade student assessment scores in digital citizenship skills on the MSTA posttest?

To address the two research questions related to digital citizenship, the data were divided into two groups to reflect the content knowledge scores and the application experience scores as they relate to the MSTA posttest.

RQ1a results. I evaluated the data set for the digital citizenship content knowledge scores using a Pearson bivariate correlation in SPSS to determine the relationship between the content knowledge scores and the MSTA posttest. The results indicate a statistically significant Pearson's correlation where $r = .284$, $p = .001$ and I rejected the null hypothesis ($H_0$1a). This demonstrated a medium strength correlation between the content knowledge scores and the MSTA posttest scores for RQ1a.

RQ1b results. I analyzed the data for the digital citizenship application experience project scores by conducting a Pearson bivariate correlation in SPSS to determine the relationship between the application experience project scores and the MSTA posttest scores. No results could be determined for this relationship since the application experience project scores for all participants did not vary and had a constant value of 100.

Research Question 2

The data analysis for the research and information fluency concept area was completed to determine what relationship exists between the content knowledge learning experiences and knowledge demonstration on the MSTA posttest and what relationship exists between the application experience learning opportunities and knowledge demonstration on the MSTA posttest. The quantitative analysis results for RQ2a and RQ2b follow:

RQ2a: What is the relationship between the content knowledge scores and eighth-grade student assessment scores in research and information fluency skills on the MSTA posttest?

RQ2b: What is the relationship between the application experience project scores and eighth-grade student assessment scores in research and information fluency skills on the MSTA posttest?

To address the two RQs related to research and information fluency, the data were divided into two groups to reflect the content knowledge scores and the application experience project scores as they relate to the MSTA posttest.

RQ2a results. I evaluated the data set for the research and information fluency content knowledge scores by completing a Pearson bivariate correlation in SPSS to determine the relationship between the content knowledge scores and the MSTA posttest where $r = .308$, $p = .000$ and I rejected the null hypothesis ($H_0$2a). This demonstrated a statistically significant relationship between the research and information fluency content knowledge for RQ2a.

RQ2b results. I analyzed the data for the research and information fluency application experience project scores by conducting a Pearson bivariate correlation in SPSS to determine the relationship between the application experience project scores and the MSTA posttest scores. No results could be determined for this relationship since the application experience project scores for all participants did not vary and had a constant value of 100.

Research Questions 3 and 4

To conduct a paired samples *t* test, four assumptions must be met (Elrod, 2020). The first two assumptions of having a bivariate independent variable and a continuous dependent variable were discussed in the data analysis assumptions section and they were met. The third assumption that each dependent variable observation is independent was met as each student's scores were independent of another student's scores. The fourth assumption was that the differences in the two related groups of the dependent variable had a normal distribution and showed no significant outliers (Elrod, 2020). To test for outliers, box plots were created for the difference between digital citizenship pre- and posttest MSTA scores (see Figure 1).

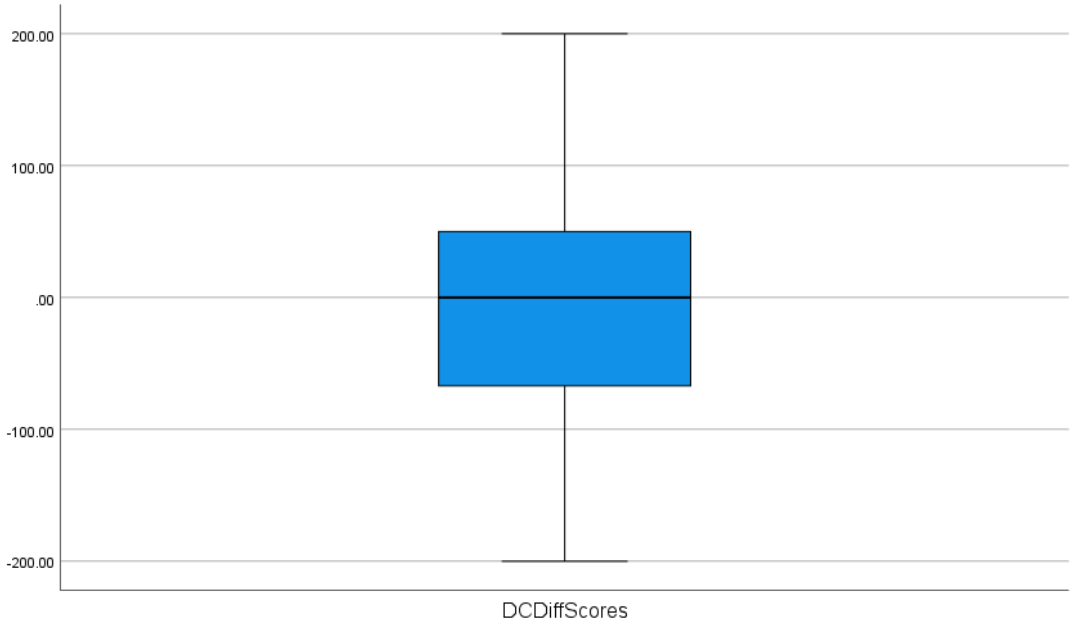

Figure 1. Box plot of the MSTA scores for digital citizenship.

Because there were no significant outliers, I ran a test for normality of the difference between digital citizenship pre- and posttest scores using a Normal Q-Q Plot

of the variable (see Figure 2). With the observed values on or very close to the line, a normal distribution was indicated. Assumption 4 was met for the digital citizenship MSTA scores.

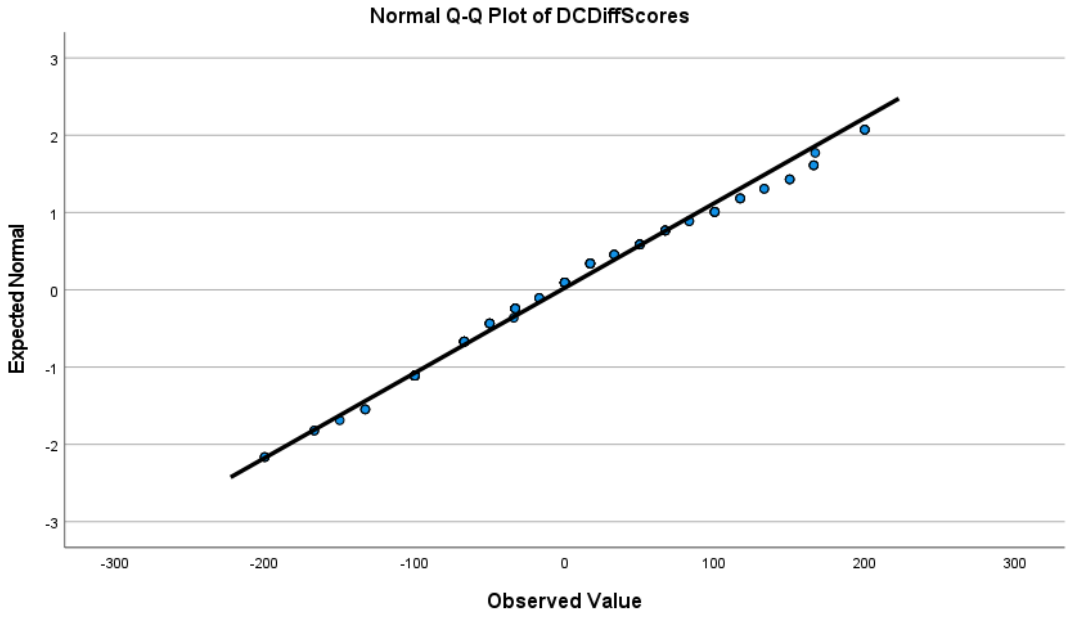

Figure 2. Normal Q-Q Plot of the MSTA scores for digital citizenship.

To test for outliers in the research and information fluency data, I created box plots for the difference between the pre- and posttest MSTA scores (see Figure 3). No significant outliers were found.

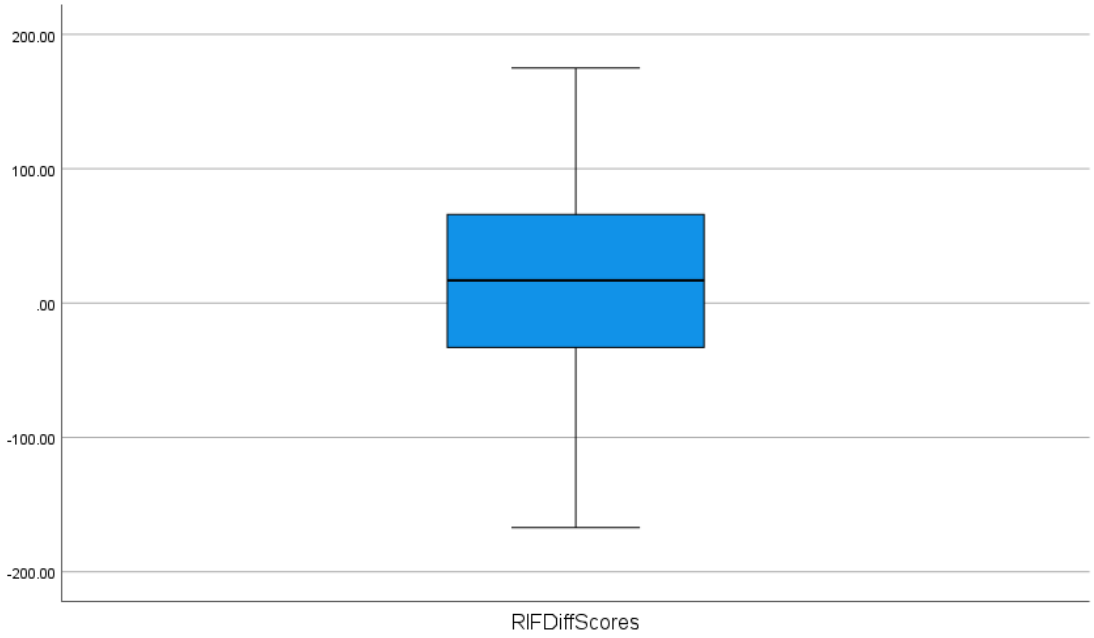

Figure 3. Box plot of the MSTA scores for research and information fluency.

I ran a test for normality of the difference between research and information fluency pre- and posttest MSTA scores using a Normal Q-Q Plot (see Figure 4). Because the observed values were on or very close to the line, this indicated a normal distribution. Assumption 4 was met for the research and information fluency MSTA scores.

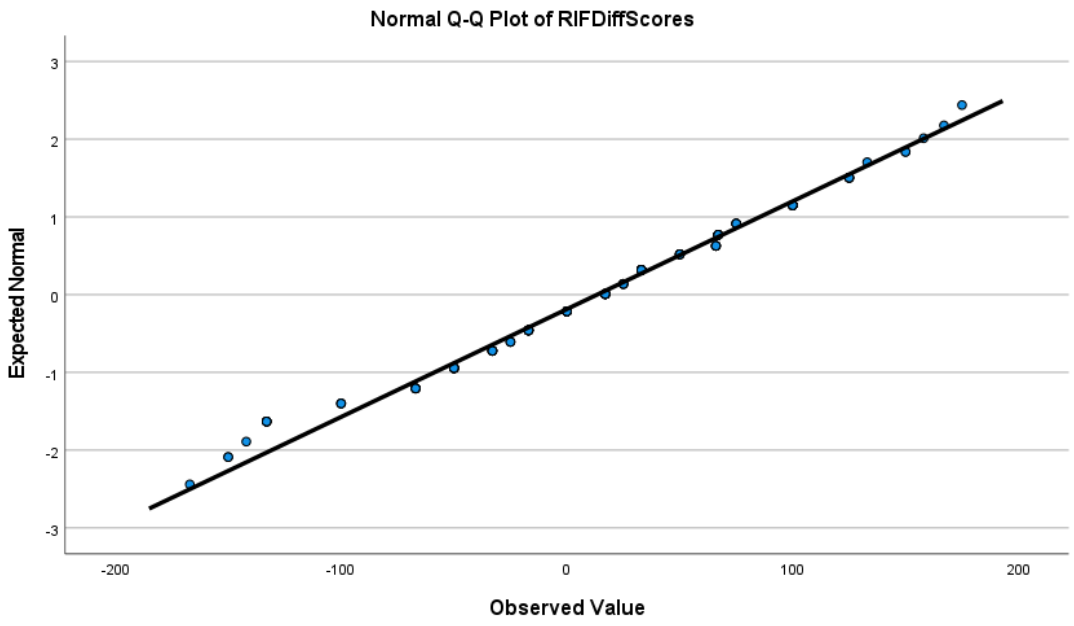

Figure 4. Normal Q-Q Plot of the MSTA scores for research and information fluency.

With Assumption 4 met, the data analysis to evaluate growth on the MSTA between the pre- to posttest administration was investigated using the following RQs:

RQ3: Is there a significant difference between the mean digital citizenship skills pre- and posttest MSTA scores?

RQ4: Is there a significant difference between the mean research and information fluency skills pre- and posttest MSTA scores?

The data analysis for the MSTA scaled scores for both digital citizenship and research and information fluency was completed to determine if there is a significant difference between student performance between the pre- and posttest administration. The data analysis included net scaled scores for each student who completed the MSTA pre- and posttest which allowed for a mean score to be determined for each test and for each concept area of the study.

RQ3 results. When the paired samples *t* test was conducted to evaluate the mean comparison for the MSTA concept area of digital citizenship, the results showed the mean for the pretest scores was 328.600 and the mean for the posttest scores was 326.285. The mean scores appear to have decreased between test administrations which would be an unexpected outcome if learning experiences had taken place between assessment administrations. In analyzing the paired samples *t* test for digital citizenship, the $t(129) = .290$, $p = .772$ and I did not reject the null hypothesis ($H_0 3$). This demonstrated that there was no statistically significant difference between the mean digital citizenship skills pre- and posttest MSTA scores.

RQ4 results. When the paired samples *t* test was conducted to evaluate the mean comparison for the MSTA concept area of research and information fluency, the results showed the mean for the pretest scores was 294.593 and the mean for the posttest scores was 304.985. The mean scores appear to have increased between test administrations which would be an expected outcome if learning experiences had taken place between assessment administrations. In analyzing the paired samples *t* test for research and information fluency, the $t(134) = -1.577$, $p = .117$ and I did not reject the null hypothesis ($H_0 4$). This demonstrated that there was no statistically significant difference between the mean research and information fluency skills pre- and posttest MSTA scores.

Interpretation of Findings

The data results showing a statistically significant relationship between content knowledge scores and the scores on the MSTA were a way to evaluate whether students developed skills for work beyond the classroom. These previously identified critical skills

that students needed to develop were tied to the findings from Fidalgo et al. (2016). By ensuring that students can demonstrate their digital literacy skills through the MSTA, students become less at risk when choosing trusted websites as they know how to identify and evaluate the source as suggested by Ascione (2015). The relationship of the content knowledge scores and the MSTA scores for research and information fluency confirms the research findings by Junisbai et al. (2016) and Saxby (2018) showing that students needed direct instruction and hands-on learning related to research skills prior to being able to demonstrate their knowledge and skills. Additionally, the statistically significant relationship between the content knowledge scores and the MSTA scores for digital citizenship supports the findings of Ata and Yildirim (2019) that students must learn, apply, and demonstrate these skills while in school. The way that digital literacy skills are taught and the opportunity for students to apply those skills extends the learning experience. The statistically significant relationship between content knowledge scores and the MSTA posttest scores support both the findings of Ata and Yildirim and Marzano's (2017) art and science of teaching framework as a learning path that students need to develop critical digital literacy skills.

The statistically significant relationship between the content knowledge scores and the posttest MSTA scores confirms the findings of Bali (2016) and Becker (2018) where students needed to be able to transfer the learned skills into applied skills that are both cognitive and technical. Additionally, the ability to demonstrate growth in digital literacy skills between the pre- and posttest MSTA administration was a way to demonstrate the preparation for the workforce as explained by Raish and Rimland (2016)

and meet expectations of worldwide policy as discussed by Iordache et al. (2017). Marzano's (2017) art and science of teaching including the need for students to have the opportunity to apply knowledge and skills prior to assessing the skills is consistent with the findings of Raish and Rimland and Iordache et al. The application of knowledge and skills is an important aspect of the learning process for digital literacy skills. However, the raw data, in the present study, showed that the application project scores did not vary and was a constant value. Further study would be needed to investigate this important aspect more closely.

The inconsistent results in knowledge demonstration scores and growth for digital citizenship and research and information fluency on the MSTA supports the need to ensure that teachers have the guidance to provide instruction for digital literacy skills learning experiences as expressed by Gerben (2017). These inconsistent findings from the present study extend the findings of Schmidt et al. (2016) as their findings showed there are limited opportunities when trying to integrate technology instruction into the classroom.

The Marzano (2017) framework for the art and science of teaching includes direct instruction through content knowledge experiences, deepening learning experiences through practice and application experiences prior to completing an assessment of knowledge and skills. Evaluating the implementation and support needs of teachers, when providing digital literacy skills instruction, could be a way to understand why the application experience projects were all scored with a grade of 100 and the content knowledge assignments were not all completed. Opeyemi et al. (2019) determined that a

lack of well-trained personnel was a barrier to integrating technology into the classroom. From this perspective, the use of customized professional development may help teachers, who are like those teaching the students in the present study, by providing targeted support. Sondergeld (2014) determined that teachers needed data to help develop skills for using quality instructional materials. Using a customized approach to professional development that allows for data gathering and evaluation is a way to prepare teachers with these needed skills. A potential further study could evaluate the effect of the learning experiences, time between test administrations, the alignment of assessment to concepts in the learning experiences and data evaluation to extend professional development to all digital literacy skills concepts.

Proposed Project

The inconsistent data results for positive growth in both digital citizenship and research and information fluency skills between the pre and posttest MSTA scores, and the inconsistent completion of content knowledge learning experiences along with inconclusive data for the application experiences, led me to determine that a professional development experience could be used to turn around negative growth and provide a better understanding of how to provide learning experiences related to digital literacy skills. Opeyemi et al. (2019) found that a barrier to integrating technology into the classroom was a lack of adequate and well-trained staff and Sondergeld (2014) determined that teachers must have the pedagogical and content knowledge skills to develop and use quality materials. The findings by Opeyemi et al. and Sondergeld support the development of the professional development curriculum and materials that

were created for the Turn IT On Academy model (see Appendix) as the proposed project. The Turn IT On Academy will be based on andragogical practices for adult learning and will provide opportunities to elicit information from teachers about additional concerns or knowledge and skills they need to support digital literacy skills instruction in the classroom. The model will allow teachers to build on their current knowledge and skills and provide a community for discussion which may lead to uncovering additional areas of weakness or needed support in a more interactive and collaborative way.

The areas of digital citizenship and research and information fluency are standards included in the TA-TEKS and are expected to be mastered by students during their learning experiences. The results of the study showed that there was a correlation between the content knowledge scores and the posttest scores. The application experience scores and posttest scores could not be evaluated due to all application experience scores being 100. This may be due to a disconnect of understanding by teachers related to state and district expectations and curriculum implementation. The focus for the project will be on implementation and teacher preparation for digital literacy skills instruction and evaluation to address the aspects of expectations and implementations for teaching and learning. The Turn IT On Academy will include:

- expectations for state mandated standards for learning related to technology applications,
- experiential learning for teachers that models best practices in teaching technology applications skills,

- example student projects that can be implemented into the classroom to assess student knowledge and skills related to technology applications, and
- guidance related to foundational skills needed by teachers to implement teaching and evaluating students in the area of technology applications.

Additionally, the Turn IT On Academy will provide a way to determine where more customized support may be needed for curriculum implementation and if predefined expectations need more clarity at the district or state level. The inclusion of a community aspect may provide teachers with more confidence to discuss their concerns and an opportunity to determine areas for future professional development or advocacy needs.

The professional development curriculum and materials will include all essential digital literacy skills related to the TA-TEKS which include digital citizenship and research and information fluency. The data from the study will be shared as a discussion point related to the gap in learning and support for the professional development learning experience. A recommendation will be made to include professional development for teaching and learning with technology as part of teacher preparation programs and yearly teacher Continuing Professional Education (CPE) requirements to help districts implement learning materials related to the essential digital literacy skills.

Section 3: The Project

Introduction

The professional development curriculum and materials in the project I created are based on standards included in the TA-TEKS. These standards establish expectations that ensure students have gained required technology applications knowledge and skills based on state-level accountability measures and state-mandated standards for teaching and learning. Though the digital literacy concept areas of digital citizenship and research and information fluency are standards included in the TA-TEKS, the results of the study show that there may be a disconnect between expectations and implementation of curriculum materials to ensure student mastery of the standards. The goal of the project (see Appendix A) is to improve the understanding of expectations and the implementation aspect of the study findings. By being provided professional development curriculum and materials related to digital literacy skills instruction and evaluation, teachers will have a better understanding of what is expected and have the knowledge and skills for teaching and learning related to all digital literacy skills, not just digital citizenship and research and information fluency. The focus for the project was on professional development related to implementation and teacher preparation for digital literacy skills instruction and evaluation as a way address the aspects of expectations and implementations. The professional development curriculum and materials (see Appendix A) cover all essential digital literacy skills related to the TA-TEKS, which include digital citizenship and research and information fluency.

The data from the study will be shared as a discussion point related to the gap in learning and support for the professional development learning experience. I will also make a recommendation to include professional development for teaching and learning with technology as part of teacher preparation programs, including preservice teacher programs, yearly teacher CPE requirements, and state licensure renewal expectations, as a way to help districts implement learning materials related to the essential digital literacy skills.

Rationale

Based on TEA (2011b) regulations, the TA-TEKS are expected to be mastered by students during their learning experiences from K–12th grade. Because teachers are responsible for delivering the teaching and learning experiences to meet this requirement, during the State of Texas 85th legislative session (2017), new laws were voted on to help ensure teachers are prepared for teaching and learning with technology. SB 1839 helped to define digital literacy as having the knowledge and ability to use a range of technology tools for varied purposes and includes the capacity to use, understand, and evaluate technology in education settings (State of Texas 85th Legislative Session, 2017). This piece of legislation also amends minimum teacher certification requirements to include teachers receiving instruction related to digital learning and following prescribed digital learning curriculum (State of Texas 85th Legislative Session, 2017). The instruction that preservice teachers are to receive must be aligned to the ISTE standards for teachers, must include evidence-based strategies that determine the preservice teacher's level of digital literacy, and provide resources for the areas of deficiencies (State of Texas 85th

Legislative Session, 2017). Certified teachers in Texas are required to complete 150 clock hours of CPE training over a 5-year period to maintain their certification as classroom teachers (TEA, 2019). In Section 8 of SB 1839, digital teaching and learning and the integration of technology became expectations for the classroom (State of Texas 85th Legislative Session, 2017). Additionally, principals must include these same aspects into campus curriculum and instruction as part of the process to maintain their certification (State of Texas 85th Legislative Session, 2017). Teachers who are certified in areas specifically related to digital technology are required to complete CPE that "uses technology to increase the educator's digital literacy and assist the educator in the use of digital technology in learning activities that improve teaching, assessment, and instructional practices" (State of Texas 85th Legislative Session, 2017, sec. 21.0543). Based on the laws amended or added in SB 1839, the value of digital literacy skills has been made more evident for both teaching and learning. The new requirements for preservice and in-service teachers show a shift towards improving the teaching and learning experiences for students related to digital literacy skills.

During the 85th Texas Legislature, HB 3526 was also passed and provided for the Technology and Instructional Materials Allotment (TEA, 2017). This law ensured that school district technology related needs were met, as they relate to instruction and student learning, and provided funding for staff to provide support for technology-related needs. The law also provided flexibility to school districts in determining which curriculum materials to purchase. School districts were given the authority to purchase state-adopted curriculum materials and nonadopted curriculum materials for teaching and learning;

however, the purchase of curriculum materials does not ensure that instruction and learning are delivered equitably. Additionally, because learning institutions can purchase curriculum materials that have not gone through the rigorous state adoption process, there is no guarantee that the instruction and learning meet the requirements of the TA-TEKS. Whether the purchased curriculum materials are state adopted or not, there is no guarantee that teachers receive the training they need to successfully implement the curriculum materials or address the learning concepts.

The implementation of purchased curriculum materials for teaching and learning to help students meet requirements for the TA-TEKS is not required or evaluated. Though publishers provide recommendations for how to implement their curriculum materials to meet the requirements of the TA-TEKS, funds are not mandated to be used to train staff on how to use the materials. The Technology and Instructional Materials Allotment stated that the funds may be used for training but not that a certain portion must be used for training (TEA, 2017). Not identifying a specified amount of funding for training can leave an imbalance when it comes to equitable training for teachers and instruction for students.

The TEA (2011b) goal related to technology literacy is to assist every student in becoming technology literate by the time they complete the eighth grade. Teachers and librarians are expected to document meeting the TA-TEKS for teaching and learning with technology as part of a technology integration approach (TEA, 2011b); however, there are no specific requirements for how to document student mastery levels of the TA-TEKS. The Texas Long Range Plan recommends that students' mastery of the TA-TEKS

be measured at second, fifth, and eighth grade, though there is not a specified way to measure mastery (TEA, 2011b). Since 2011, the updated recommendations, standards, and curriculum materials have been in place for ensuring that students master the TA-TEKS, but the requirement for professional development to ensure teachers are prepared for teaching and learning related to digital literacy skills was not put in place until 2017 (State of Texas 85th Legislative Session, sec. 21.0543).

From the results of the project study, there appears to be a disconnect between the adoption and implementation of curriculum materials and the requirement for professional development for teachers. This disconnect could be an explanation for the data results in this study showing a difference in significance levels based on the content knowledge of digital citizenship and research and information fluency. By providing a professional development model for the current project that focuses on digital literacy skills and the integration of technology into the classroom, there could be more equitable professional learning experiences provided for teachers, which could affect classroom implementation for teaching and learning. Additionally, the professional development curriculum and materials for this project focus on digital literacy skills as defined by the TEA while addressing the gap between state and district expectations. By providing professional learning experiences to teachers that focus on digital literacy skills, capacity would be built for teachers' ability to use digital literacy skills for the integration of technology into the classroom. This would, in turn, enhance the learning experiences of students as they build capacity as digital citizens consuming and producing using technology.

Review of the Literature

Professional development is not only a requirement, but a best practice for teachers to ensure that their knowledge and skills prepare them to meet the ever-changing needs of their students and classroom settings (Svendsen, 2020). Svendsen (2020) defined professional development as "activities that prepare teachers for their job, including initial training, induction courses, in-service training and continuous professional development within school settings" (p. 111). My research for professional development in the field of education began with a direct search using the Walden University Library resources to define professional development and determine which models of professional development have shown positive results for teacher growth and student academic improvement. Because the results of this study focused on student gaps in digital literacy skills, I conducted a survey of the literature and research related to professional development curriculum and materials. During the research process, it became evident that the term, *professional development*, applied to both preservice and in-service teachers but included different aspects and models of preparation for success in the classroom setting. Based on this information, I expanded my search of the literature to include types of professional learning experiences that preservice and in-service teachers need to better develop and refine their practice. To help narrow these results, the following topics and keywords were used: *how to prepare teachers for utilizing digital curriculum for instruction in a blended learning environment*, *how to effectively use technology in the classroom*, *how to address equity gaps in learning*, and *how to provide personalized instruction related to digital literacy skills and instructional technology*.

Based on the literature I reviewed, there are many professional development models for preservice and in-service teachers that include similar concepts and best practices. However, the research showed limited professional development models that focused on instruction, implementation, and evaluation as a path for eliminating a gap in mastery of digital literacy skills.

Value of Professional Development

Professional development, in any industry, is seen as an important aspect of growth for an individual that then positively affects the daily actions of the person as they complete their job (Svendsen, 2020). In the field of education, professional development is a crucial way to improve the knowledge, skills, and attitudes of teachers (Aldosemani, 2019). Professional development learning experiences for teachers are intended to assist them in transforming teaching and learning. By enhancing their knowledge and skills, teachers can improve their classroom teaching and student achievement (Svendsen). Designing a professional development experience that prepares teachers based on identified gaps in student digital literacy skills would be a way to improve the knowledge, skills, and attitudes of teachers and, in turn, help in the transformation of the student learning experience.

Though professional development options have been an aspect of research and teaching for centuries, there is not a one size fits all model that has been developed for continuous professional development as there is not a one size fits all classroom of students (Canaran & Mirici, 2020). For students to learn and show academic growth, a teacher must be prepared with the skills needed to ensure the students have their best

chance at learning the materials being shared (Gerben, 2017). When teachers have a better understanding of how students learn, they are better able to help students learn Sondergeld (2014). Professional development provides this opportunity when teachers are provided professional learning experiences that are founded on an understanding of the neuroscience behind learning and the needs of the classroom (Bana & Cranmore, 2019). To ensure that teachers have a foundation of understanding related to the neuroscience behind learning, professional development must be multifaceted and include aspects of behavior, knowledge, and emotions so that teachers are able to translate what they learn into their workplace environment (Canaran & Mirici, 2019). The data from the present study revealed that the instructional components were not delivered to all students, and one way to address this gap would be to provide teachers with professional development that includes the neuroscience of learning and focuses on the knowledge and skills needed to adjust digital literacy skills instruction to meet student needs based on these concepts.

Ensuring that all teachers have the necessary skills for enhancing the learning experiences of students requires equity in the way that teachers are provided professional development experiences. This learning process for teachers begins with their own preservice academics and continues throughout their in-service teaching period as they refine their skills and learn to apply new methods in the classroom (Kahraman & Kuzu, 2016). Through this learning process of teachers and the ever-changing needs of the classroom, the education of a teacher should never be considered complete (Srinivasacharlu, 2019). With the constantly evolving digital landscape, teachers need to

be prepared with the skills to integrate digital literacy in their classroom as advancements in technology change.

The value of professional development for preservice and in-service teachers varies by need and experience levels. The value of a teacher's professional development as it relates to student achievement can be seen through three steps: enhancing teacher knowledge and skills which then improves classroom teaching and ultimately raises student achievement (Svendsen, 2020). While professional development holds value, it can also be limiting in the way it has been traditionally presented to teachers. As traditional professional development experiences include training programs, seminars, and one-off workshops, teachers often become reliant on others for their learning and growth instead of becoming empowered to continue their own learning and growth (Canaran & Mirici, 2019). For professional development to have a positive effect on the teacher's knowledge and skills and on student achievement, Srinivasacharlu (2019) suggested that professional development should include activities that develop the individual teacher's skills, knowledge, expertise, and other characteristics related to being a teacher.

Eurydice European Unit (2000) report shows that teacher training related to technology skills can have an effect on both the equity and quality of education for students. This study was conducted approximately 20 years ago, but the information still pertains today in that both equity and the quality of education are affected by professional development. Though the value of professional development has been expressed for years and traditional models of professional learning experiences have been implemented, a

focus on technology related knowledge and skills has not been provided with the same opportunity as in the core curriculum areas. Data from the present study does not demonstrate growth in research and information fluency skills for students between the MSTA pre-and posttest. This could be related to the implementation of the lessons for digital literacy skills instruction. By providing focused professional development related to technology and digital literacy skills instruction, there is the potential to positively affect the student learning experience.

Political rhetoric surrounding technology in education is supportive but the federal dollars and political will needed to get the funding to schools is not happening thus the technology focused professional development has been less available to teachers (Tomassini, 2015). When the Enhancing Education Through Technology Act went defunct, funding was no longer available to support the professional learning needs of teachers in integrating technology into the student education experience, yet it was still expected (Tomassini, 2015). A key component to professional development, regardless of the subject matter, is funding and the value it holds for teachers and students is equity. Though state funding may be available and state education agencies have adopted standards for student learning, a lack of uniformity across states on how to implement and evaluate teacher professional development can affect equity for professional learning experiences and thus affect student achievement (Tomassini, 2015). Even within states, equity of the learning experience related to digital literacy skills is a concern. Using educational technology tools, virtual learning opportunities and professional development for teachers can bridge the gap to providing equitable learning environments for students

(Chu, 2019). By providing professional development focused on the teaching and evaluating of student digital literacy skills, teachers will have the opportunity to help students bridge the present study's identified gap related to digital citizenship and research and information fluency.

Types of Professional Development

Many types of professional development experiences have been made available for teachers. These experiences include in person, virtual, synchronous, and asynchronous options, but historically what is offered is based on what works best for the school's or district's planning and budget as opposed to what teachers determine is their area of need. Regardless of the many types of professional development that are available, current professional development opportunities for teachers are often time consuming, are usually delivered in a face-to-face setting, lack relevance to the classroom, and provide teachers with limited choice and independent learning based on their needs (Nelson & Bohanon, 2019). In an education system that promotes the need for equity in education for students, a lack of expectations for implementing student learning experiences and a lack of professional development opportunities based on identified classroom needs, does not promote equity in education. By understanding the many options available for professional development experiences for preservice and in-service teachers, a design that is more flexible and based on the actual needs of teachers instead of the perceived needs can be developed.

With the need to integrate technology into the classroom to improve student learning experiences and prepare students for a more digitally enhanced life, a variety of

professional development models have been developed. Three models were developed to help teachers integrate technology into the classroom: the substitution, augmentation, modification, redefinition model (SAMR), the technology integration planning cycle model (TIPC), and microteaching. To help teachers understand the different degrees to which technology can be integrated into the classroom setting and affect the learning experience, the SAMR model was developed. The levels of the SAMR model include substitution, augmentation, modification, and redefinition (Aldosemani, 2019). The SAMR model provides teachers with a way to differentiate instruction and better prepare students to apply their knowledge and skills. As an aspect of the study was for students to receive direct instruction and practice prior to a real world like application of knowledge, the SAMR model would provide teachers with an avenue for project development and an understanding of how to evaluate student created products. The TIPC training model often includes sessions focused on whole-group learning, long-term planning, collaboration with instructional coaches, professional learning communities (PLC) with a website to share resources, recommended digital tools, and observations with reflections on the experience (Hutchison & Woodward, 2018). The microteaching model of integrating technology has the teacher participate in a teach, critique, reteach cycle as they improve their knowledge and skills related to teaching with technology (Diana, 2013). This model for learning to integrate technology into the curriculum allows for more focus on specific strategies. By using aspects of the SAMR, TIPC, and microteaching models during the professional development project, teachers would be better prepared to ensure digital literacy instruction and technology integration in their

classroom environment. I use aspects from all three models in the project to ensure that teachers are learning how to integrate technology and receiving the support they need through practice, collaboration, coaching, and PLCs.

The peer coaching or mentoring model was designed to prepare teachers who are new to a concept area or new to the teaching profession to have a more successful teaching and learning experience in their classroom by having a peer to mentor them. The peer coaching and mentoring aspect of professional development can affect the professional growth and development of teachers (Alsaleh, Alabdulhadi, & Alrwaished, 2017). The various stages needed to have a successful peer coaching or mentoring experience for lesson planning include having a preview conference, lesson observation, and reflective conference (Alsaleh et al., 2017) to discuss and prepare as well as reflect on the teaching and learning experience. Alsaleh et al. (2017) found that the peer coaching and mentoring strategy should be implemented in the teaching and instruction of core subject area courses while Kahraman and Kuzu (2016) found the model to have a positive effect in the area of technology instruction. An additional aspect of the peer coaching and mentoring model was to have teachers share their knowledge and experience as they built social networks along with academic networks. Building social and academic networks was shown to support traditional mentoring experiences but also provide new opportunities for learning and sharing of ideas (Kahraman & Kuzu, 2016). An example mentor-mentee program called the having active participation prepares you hour provided preservice teachers with weekly professional development workshops that prepared them to present at an annual conference (Verkler & Hutchinson, 2011). Similar

to what preservice teachers experienced during having active participation prepares you hour with their mentor, in-service teachers have experienced continuous professional development with a peer or mentor as a more sustained approach to professional learning (Canaran & Mirici, 2020). By creating a continuous professional development experience, teachers can be active participants and producers in their learning which then enhances student learning (Canaran & Mirici, 2020). The professional learning experience developed for the present project includes an ongoing mentor component to provide support and guidance through the learning and teaching process related to digital literacy skills instruction.

An additional type of professional development focuses on the collaborative aspect of teaching and learning. The team-teaching model relies on experiences and expertise of others and includes research, collaboration, and reflection that focus on learner-centered instructional experiences (Canaran & Mirici, 2020) while the collaborative professional development model uses classroom observations and focus group interviews to partner in-service and preservice teachers together (Liu, Tsai, & Huang, 2015) for the learning experience. Liu et al. (2015) found that when implementing the collaborative professional development model, in-service teachers adjusted and improved their instruction methods while receiving technology integration support from preservice teachers and preservice teachers improved their pedagogical knowledge. Svendsen (2020) found that collaborative inquiry between teachers positively affected their professional development. Using a professional development model that partners teachers together in a collaborative learning experience can provide a way to

include pedagogical knowledge, content knowledge, and curriculum planning in the design and implementation of curriculum (Kelly, Wright, Dawes, Kerr, & Robertson, 2019). The present project design includes a collaborative approach to assist teachers in preparing, practicing, and reflecting on their digital literacy skills instruction and implementation in the classroom.

PLCs have become an additional way for teachers to partner together, either in person or digitally, to learn and share in their development of knowledge and skills. When teachers and administrators participate in the PLC, it allows them to continuously seek and share learning then act on what they have learned (Svendsen, 2020). PLCs were identified by Feldman (2020) as a way to disrupt the routinized practices, habits and patterns that teachers develop which leads teachers to both personal and professional growth. When teachers participate in a virtual PLC after attending a professional development learning experience, it provides support and aid for continued learning and for implementation assistance (Moodley, 2019). A component of the project professional learning experience is the inclusion of a PLC that includes all mentors and mentees along with district administrators to provide support and learning related to digital literacy skills instruction and technology integration into the classroom.

Regardless of the professional development model used for teaching and learning, there is an underlying concept area that teachers need to understand to ensure that what they learn can be translated into improvements in student learning. This type of professional development helps teachers to transition from a focus on foundational knowledge to a focus on meta-cognitive development (Kelly et al., 2019). If teachers

have knowledge of brain development, they can work more efficiently with students, develop lessons and assessments that were more informed, and thus increase learning and achievement for students (Bana & Cranmore, 2019). Providing teachers with professional development on the neuroscience of learning will inform their practice of instruction in the classroom (Bana & Cranmore, 2019). By using a codesign for curriculum planning model that ties to how students learn, teachers can better design learning experiences that include pedagogical knowledge and curriculum experiences (Kelly et al., 2019). Having an awareness of possible challenges that students face during the learning process is considered a key aspect to creating learning experiences (Canaran & Mirici, 2020). As part of the present project, participants will learn to better understand how learning happens and how the science of learning ties to digital literacy knowledge and skills.

Online learning models provide teachers with flexibility in when and where they may attend their professional learning experience. Massive open online courses (MOOCs) and learning management systems (LMSs) are tools that provide a way for professional development to be delivered digitally. MOOCs were designed to be a delivery method for large-scale teacher professional development in the context of mass displacement (Kennedy & Laurillard, 2019) where as LMSs are online systems or software that can be used to plan, deliver, and assess a learning process (Sharma, 2017). LMSs and MOOCs provide an online option for delivering professional development to teachers in both synchronous and asynchronous ways providing more opportunities for how teachers learn and improve their practice. Longhurst, Jones, and Campbell (2017) identified that learning modules delivered over a 2-year sequence including summer

instruction, winter workshops, and monthly follow-up sessions during the school year provided teachers with support needed for implementation. MOOCs and LMSs both provide the support for this type of a professional development model. An additional aspect of professional development that can be supported by MOOCs and LMSs is coaching sessions. When these sessions are delivered digitally, it provides a professional development solution that is cost-effective and meets the needs of teachers (Nugent et al., 2016). As the project participants will be using the district provided LMS, they will have access to anytime, anywhere learning, and collaboration opportunities using a tool they are familiar with and is already provided to them as part of their teaching and learning tool kit.

Teacher Development Needs

A preservice teacher is one who is in the process of completing courses or training to become a certified teacher (Russell & Martin, 2017) whereas an in-service teacher is one who already holds teaching credentials and is teaching in the classroom (Koellner & Greenblatt, 2018). When certified teachers learn new concept areas to teach, they begin with a new learning process and do not have experience behind them to help with the teaching and learning process. Regardless of a teacher's certification status, one of the crucial development needs of teachers is building self-confidence which enhances learning and motivation while helping to reduce feelings of isolation in the classroom (Canaran & Mirici, 2020). Teachers require their professional learning experiences to be designed in a way that helps them to develop initial knowledge and skills for concepts that they teach in the classroom. Diana (2013) found that preparing teachers for what it is

like to teach in a classroom by providing for a mentor to guide them through their learning, can foster professional growth. Teachers who are experienced in the classroom, but are expected to teach new concepts, also benefit from having a mentor to guide them. The feeling of team cooperation helps build self-confidence and enthusiasm as well as establish autonomy for facing future obstacles (Alsaleh et al., 2017). Providing a mentor or peer should be done on a voluntary basis so that building a trusting relationship can happen (Alsaleh et al., 2017). Using a peer coaching or mentoring model during the professional learning experience was shown to help fill the gaps between theory and practice to ensure teachers are more prepared for the classroom experience (Alsaleh et al., 2017). Having a more collaborative style of continuous professional development was determined to be critical to self-confidence thus reducing feelings of isolation and enhancing their learning and motivation (Canaran & Mirici, 2020). Using this approach as a part of the continuous professional development model through collaborative planning, content integration, teaching, and evaluation, teacher self-confidence improved, and teachers felt more supported and prepared to overcome possible challenges (Canaran & Mirici, 2020). Greshilova, Kimova, and Dambaeva (2020) also found that collaboration and interactivity were ways that help in-service teachers develop professional skills related to designing and implementing aspects of the education process. By including a collaborative support system in the present project for professional learning, teachers will build confidence with teaching digital literacy skills and integrating technology into their classroom.

Gross (2015) evaluated the professional development school model where the academics and student teaching were integrated into the learning experience over a 5-month period. Gross found that this model provided the opportunity to learn concepts and then immediately apply them during a practicum experience. Diana (2013) found that providing the ability to prepare a lesson then receive feedback from a mentor teacher prior to teaching the lesson allowed for modifications to be made based on best practices in education which helped to build self-confidence. Being able to then reflect on the teaching experience with a mentor helped with understanding how to adjust for future lessons and experience the lesson planning cycle. By applying these models any time a teacher is learning a new concept area to teach, they are better able to build self-confidence for the independent teaching experience in the classroom. Liu et al. (2015) found that this type of collaboration was essential to gaining pedagogical skills. Srinivasacharlu (2019) found that along with having the pedagogical skills, teachers needed the digital skills and competencies to prepare for a world with constant change and be able to apply the latest strategies, models, and techniques in their teaching. The collaborative aspect of the professional development experience was necessary to effectively integrate technology in the classroom (Liu et al., 2015). By providing experiences and reflection time with a mentor during the present project, teachers will gain pedagogical skills and experience with the digital literacy curriculum materials they will be implementing in the classroom.

Longhurst et al. (2017) found that the adoption of concepts and practices learned during professional development fits on a continuum that is influenced by personal

beliefs, learning experiences, and the sociocultural environment. When teachers participate in professional development that includes techniques, methods, and tools that they view as effective, they are more likely to implement something in their classroom (Longhurst et al., 2017). Being mindful of axiological imperatives in designing content for teacher professional development was seen to have a positive effect on a teacher's moral attitudes and decision-making, deepen their cultural experience and influence their ability to use information and communication technologies (Greshilova et al., 2020). As traditional professional development includes externally driven courses with little focus or consideration for teachers' needs or practices in their classroom setting, Canaran and Mirici (2020) found that the traditional model was less effective in influencing the student learning experience. A key aspect to effective professional development is including teachers in the decision-making process and encouraging reflection, classroom research, and collaboration along with evaluation and follow-up support (Canaran & Mirici, 2019). Nelson and Bohanon (2019) found that for professional development to be effective, it needed to be ongoing, include training, practice, and feedback, and ensure both time and support during follow up experiences. One successful aspect of the continuous professional development model was the use of coaches to provide support that advanced teacher competencies as the coach worked with the teacher based on the teacher's classroom experiences and not in a one size fits all model (Nelson & Bohanon, 2019). The project study includes aspects of reflection, research, collaboration, and evaluation through a partnership between the teacher and the mentor so that the teacher is involved in the decisions for their classroom.

A professional development model that offered an online continuing education program, pedagogical-focused content and provided mentor support was found to be a successful way to prepare and support professional learning (Denton, Davis, Smith, Beason, & Strader, 2005). Teachers with lower content knowledge and more teaching experience during training showed more concern about student and teacher centered practices (Rozenszajn, Snapir, & Machluf, 2019). It was also found that higher content knowledge and less teaching experience led to more concern about higher order thinking skills and the gap in knowledge between teacher and student (Rozenszajn et al., 2019). Providing professional development that meets both needs could provide a better foundation for future teaching and learning. Verkler and Hutchinson (2011) found that by providing opportunities to participate in a real-life professional development experience that included a quality mentoring program with volunteerism, commitment, reciprocity, communication, and apprenticeship, candidates were better prepared for their teaching experience. The concepts of a mentoring/coaching program and follow up online continuing education and support proved valuable to improving the teaching experience. As part of the present project study, creating a professional development model that incorporates the aspect of coaching and collaboration along with digital follow-up support ensures a better opportunity for participants to build self-confidence, knowledge and skills related to digital literacy skills instruction and evaluation in an effort to improve student achievement.

Moodley (2019) found that by having post-teacher professional development activities and interactions aimed at monitoring and supporting teachers in a digital

setting, a community of learning and sharing could be formed despite distance and time challenges. As part of follow-up professional development activities, teachers prefer that these opportunities be provided in a way that was consistent with what was learned during the original professional development experience so that they can further translate their learning experience into practice in the classroom (Bana & Cranmore, 2019). By creating PLCs that include reflections about the daily classroom experience, teachers have been able to increase their professional knowledge and improve student learning experiences as teachers need to try out new teaching practices then reflect together with colleagues about the experience (Svendsen, 2020). Feldman's (2020) findings supported the importance of social practice theory for improving teaching and learning and PLCs are one way that helps teachers break out of their routines by discussing and learning from other teachers in a collaborative and collective manner. This type of collective and reflective inquiry allows teachers to be more open about their practice and knowledge base by building a community of support for thinking, decisions, and actions (Feldman, 2020). Verkler and Hutchinson (2011) supported the findings that the effectiveness of teachers correlates positively with active participation in professional development that includes reflective practice. The present project professional development experience includes a PLC component to build the collaborative support system for teaching and learning over time.

Srinivasacharlu (2019) found that professional development related to digital skills and competencies was important so that teachers could prepare for a world with constant change and be able to apply the latest strategies, models, and techniques in their

teaching. The practice of including digital skills instruction for teacher professional development was supported by Aldosemani (2019) through findings that teachers need to have knowledge and experience in teaching and learning with technology to positively support pedagogical outcomes. Liu et al. (2015) found that collaboration was an essential way to effectively integrate technology in the classroom. In addition to knowledge and experience in teaching with technology, Bana and Cranmore (2019) found that if teachers have knowledge of brain development they could work more efficiently with students, develop lessons and assessments that were more informed and thus increase learning and achievement for students. For teachers to be able to integrate their content and technological knowledge into their pedagogical knowledge for planning, implementing, and assessing student learning, the technological pedagogical content knowledge model was developed. Kelly et al. (2019) identified this model as a successful way to enhance teacher knowledge and their integration of technology into the classroom. By incorporating technology and real-life experiences of teachers into the professional development model for the present project study, teaching and learning related to digital literacy skills can help teachers build self-confidence and be ready to apply what they have learned in their classroom environment. Additionally, by including support through mentoring/coaching and follow-up discussions about the teaching and learning experience in the present project study professional development model, there is a higher likelihood of student achievement in the areas of digital literacy skills beyond just digital citizenship and research and information fluency.

Aspects of Successful Professional Development

A concern expressed by Nelson and Bohanon (2019) is that face to face professional development experiences with little or no follow up and limited expectations for implementation does not meet the needs of all teachers. Moodley (2019) supported those concerns when finding that traditional in-service training lacked the follow-up support that helped teachers improve their competencies. Longhurst et al. (2017) determined that using proven strategies, practices and effective curriculum during professional development is not enough to ensure implementation in the classroom setting. For learning to be translated into practice in the classroom Bana and Cranmore (2019) recommended focusing on the five key features of effective professional development: content focus, active learning, coherence, sustained duration, and collective participation. In addition to these aspects, Canaran and Mirici (2019) identified the requirement of setting goals for the content, implementation, and evaluation of the learning experience. One goal that was identified was including the teacher as both a learner and teacher so that the teacher could actively generate knowledge instead of passively consuming it. One way that Diana (2013) suggested for accomplishing this goal was to have the teacher prepare and present a lesson to a group of students then reflect on the experience with a more veteran teacher. An additional aspect of a successful professional development experience, as presented by Dos Santos (2019), was to include a portion focused on how to transfer knowledge gained from textbooks or teaching materials into classroom management and practices that could be applied in the classrooms. The present project study professional development model provides the

opportunity for participants to experience the learning as a student, prepare and deliver a similar learning experience for their classroom, and then evaluate the experience with their mentor to determine areas for adjustment.

Hutchison and Woodward (2018) established that a professional development experience should be a model that includes both discussion and application, provides digital tools that tie to context-driven instruction and includes multiple modes of engagement. Providing a variety of learning experiences during the professional development was important because it gave teachers the opportunity to participate in activities that best fit their needs and experience level. Hutchison and Woodward also found that by having teachers participate in professional development that was designed to help them overcome barriers and receive support based on their skill level, they were better able to translate what they learned during professional development into practice in the classroom. The present project study professional development model takes into consideration discussion, application, and support through a variety of learning experiences to assist participants in overcoming challenges.

As teachers are moving towards integrating technology into their teaching and learning, Kelly et al. (2019) found that using workshops, strategies and instruments involved with digital technologies was an effective way to facilitate learning through co-design. The co-design model made sure that teachers had the needed content knowledge, pedagogical knowledge, and technological knowledge to be able to integrate the technology into the curriculum tied to the learning objectives (Kelly et al., 2019). To meet the diverse needs of a large group of participants across space and time, Kennedy

and Laurillard (2019) found that technology could be successfully used for learning activities so that the activity could easily be reused and automated feedback and peer review could be made available. Liu et al. (2015) determined that standard in-service training courses lacked the hands-on activities that prepare teachers to adequately integrate technology into their classroom. Teachers observing other teachers successfully integrating technology enhanced the likelihood that the in-service teacher would adopt new technologies into their classroom and thus Liu et al. recommended including a hands-on experience during professional development. The present project study professional development model incorporates content knowledge, pedagogical knowledge, and technical knowledge for the participants as well as providing experiences in integrating technology so that participants can build confidence to translate into the classroom.

Nelson and Bohanon (2019) found that for professional development to be effective, it needed to be ongoing, include training, practice, and feedback and ensure both time and support during follow-up experiences. The use of coaches was a way to provide support that advanced teacher competencies as the coach would work with the teacher based on the teacher's classroom experiences. Professional development that includes an e-mentoring component was also seen to establish relationships and build a support system that goes beyond the initial learning experience (Kahraman & Kuzu, 2016). Verkler and Hutchinson (2011) supported the use of collaboration and coaching in that analyzing experiences and critically discussing the effect that the professional development had on its participants was an important aspect to the learning process.

Verkler and Hutchinson determined that rewarding professional development occurs when working and learning along-side trusted colleagues and in 2020 Canaran and Mirici determined that this type of support was still critical to teacher development. The present project study professional development partners each teacher with a mentor or coach to assist them in the learning and evaluation process for in-person and virtual to build a support system.

Rozenszajn et al. (2019) identified several types of knowledge that are required in teaching and understanding. Two of the main types of knowledge, content knowledge and pedagogical content knowledge, need to be included in professional development programs to help teachers build meaningful experiences with students. It was determined that effective professional development programs should include a focus on learning communities that provide intellectual, social, and material resources for learning and innovations in teaching (Rozenszajn et al., 2019). When these aspects were included in a summer institute with follow-up coaching sessions, teachers showed significant changes in their teaching practice (Nugent et al., 2016). The institute included modeling and practice sessions for teachers to learn from coaches and each other as they observed and discussed practice lessons that could be implemented in the classroom for the following school year. The coaching aspect helped teachers focus on translating their concept knowledge into practice (Nugent et al., 2016). Svendsen (2020) established that when professional development efforts are made with teachers based on their needs, it is more successful as teachers then become active learners and can develop a PLC. Key aspects of a successful learning community were identified as: having shared values and vision,

being collectively responsible, using reflective professional inquiry, and collaboration and inclusion (Svendsen). By including a PLC aspect in the present project study professional development, participants will have access to an ongoing support system beyond their mentor.

Bana and Cranmore (2019) established that successful professional development experiences should consider the structure of the professional development, include an understanding of the neuroscience of learning and maintain follow-up experiences for implementation. Nugent et al. (2016) determined that teachers needed foundational knowledge and confidence to implement instruction and practices in the classroom along with support of a mentor or coach and that a summer institute could provide this foundation. The coaching aspect of the institute would help teachers focus on translating their concept knowledge into practice and would have a positive effect on teachers developing self-efficacy and self-confidence in implementing the skills and practices. As teachers need support from their peers, a mentor or coach, the institute was determined as a model where teachers and coaches would be provided with the opportunity to begin building a relationship in person before moving to a digital format. Teachers and coaches would use the design thinking framework to challenge their current pedagogical practice as curriculum planning occurred so that a partnership for teaching and learning would form and then translate into the classroom.

Hamilton (2020) identified the development of a portfolio as an important piece of collaborative professional development that would continue the learning process for teachers across the education continuum. Gelfer, O'Hara, Krasch, and Nguyen (2015)

identified the portfolio as an effective way for teachers to gather and organize examples of products from their teaching activities. Gelfer et al. and Hamilton all emphasized the importance of establishing the purpose for developing the portfolio so that identifying the effect the portfolio has on teaching and learning could be evaluated and discussed. The portfolio could allow teachers to collaborate with mentors and colleagues and conduct self-guided inquiry as they discussed and reflected on their learning experiences. The main aspects of the effectiveness of the portfolio was determined to be how it is developed, mentored, and scaffolded for authenticity (Hamilton, 2020). Using the portfolio and working with a coach were determined to be effective ways to develop reflective practice and collaboration skills and competencies needed to teach diverse learners (Hamilton, 2020). In the present project study professional development, I use mentors to support participants in their content and pedagogical knowledge to help build confidence in implementing digital literacy skills instruction into the classroom. As part of the professional development, participants will be encouraged to use what they are creating and student samples to build a portfolio that can be used to collaborate with others during and beyond the professional development experience.

Conclusion

Ensuring an equitable education for students when teachers are not provided equitable instruction for teaching and learning with technology (Chu, 2019) creates a gap in teacher and student knowledge and skills. This gap could account for the findings of the present study showing a gap in student achievement between the MSTA pre- and posttest administration when evaluating digital citizenship and research and information

fluency even though curriculum was provided for student learning. The literature review supports the creation of the Turn IT On Academy (Appendix A) which uses a blended learning model to ensure both in-person and digitally delivered learning experiences, mentor/coaching for curriculum design and support, building a PLC and opportunities to showcase curriculum in action along with student products. The Turn IT On Academy could be a way to provide training and support to teachers so that they have a better understanding of how to implement the curriculum materials, support the learning experience, evaluate student achievement goals, and prepare students with needed digital literacy skills.

Project Description

The Turn IT On Academy model will include aspects tied to successful professional development experiences based on the information gathered in the literature review. The Turn IT On Academy will be based on a blended learning model to ensure both in-person and digital learning experiences, mentor/coaching for curriculum design and support, building a PLC and opportunities to showcase curriculum in action along with student products during the teachers' learning experience. To ensure a deeper understanding of how and why to implement digital literacy skills instruction for students, the academy will include information on the following:

- expectations for state mandated standards for learning related to the TA-TEKS,
- recommendations for teaching and learning digital literacy skills, including guidelines from the ISTE standards for teachers and students,

- experiential learning for teachers that models best practices in teaching and learning related to digital literacy skills,
- example student projects that would be implemented into the classroom to assess student knowledge and skills related to digital literacy skills, and
- guidance related to foundational skills needed by teachers to implement teaching and evaluating students around digital literacy skills.

The professional development curriculum and materials for the academy will include digital literacy skills related to the TA-TEKS and focus on the concept areas of digital citizenship and research and information fluency that were shown to be gap areas from the study.

Resources

The cohort of participants for the Turn IT On Academy will be initially limited to 10 classroom teachers and 10 mentors who are technology specialists at either the campus or district level. There will be a need to identify funds to support the purchase of materials, breakfast, and digital collaboration tools for the 20 participants and the presenter. The digital collaboration tools will include Backchannel Chat for tracking questions during the professional development sessions and between meetings, a quick response code reader app for participating in activities and Poll Everywhere for gathering information and data. As funding for professional development is included in a campus and district budget, there will not be a need to raise funds or charge teachers a registration fee. A room will be secured at the campus for hosting the in-person sessions.

As the Turn IT On Academy focuses on digital literacy skills instruction, teachers and mentors will be expected to bring their district issued laptop to all in person sessions and to use their web cams for virtual sessions. Access to the Internet will be available through Wi-Fi on the campus. As the participants will be using district-issued laptops, there should not be a concern for inability to connect to the Wi-Fi; however, ensuring that Backchannel Chat and Poll Everywhere are not blocked websites will be necessary.

Technology is a critical component of the Turn IT On Academy. Using Wi-Fi presents a potential barrier to completion of the aspects of the Turn IT On Academy that are delivered virtually or using an online tool. Additionally, if the district-issued laptop is not working properly or has not had updates, there is the potential for malfunction that could interrupt the teachers learning experience. It will be important to have access to a district technology specialist to assist with any potential technical issues.

Implementation Plan

The initial professional development Turn IT On Academy will be held at a single campus for middle school teachers who have been identified by their principal for participation. The principal will have also identified mentors and which teachers they will work with. The model will be able to be adapted for other campuses, districts, and grade levels. The Turn IT On Academy will be held in the library for all in-person training sessions. All virtual sessions will be completed using district-provided laptops. The observation experiences will take place in the respective teacher's classroom.

The first in-person day of the Turn IT On Academy will being at 8:00 a.m. with sign in, a light breakfast, and introduction activities that set the stage for the professional

development learning experience, day, and communication. At 9:30 a.m., participants will complete a variety of activities to get to know each other and find the mentor/mentee match. After a brief break at 10:30 a.m., participants will begin to learn about digital literacy skills and the TA-TEKS standards and student expectations. One hour will be provided for lunch away from the training starting at 12:00 p.m. After lunch, participants will learn about the science of learning and how digital literacy skills benefit the classroom before they complete a gallery walk activity to see if they can identify digital literacy skills standards in student work examples. At 1:45 p.m., participants will impersonate students in a digital literacy skill learning experience where they will complete a lesson independently and a project with their partner. They will be able to take a 15-minute break during their student learning experience. At 3:45 p.m., participants will present their final products to the group. Throughout each day participants will add post it notes, with questions or ideas that do not pertain to the immediate focus during discussions, to a graphic organizer on the wall entitled the parking lot. To wrap up the day, these post it notes will be reviewed and discussed as needed. Additionally, the homework will be assigned, and all participants will complete an exit ticket activity to share one new thing they learned and one thing that surprised them.

The second day of in-person professional development for the Turn IT On Academy will begin at 8:00 a.m. with a light breakfast and puzzle to be completed followed by a discussion of how the puzzle applies to digital literacy skills. At 8:45 a.m., the participants will have a debriefing from their student learning experience to discuss

what they liked, what caused pain points and what they learned. This activity will be followed by a morning break at 9:30 a.m. then participants will learn about the state adopted curriculum materials and expectations for learning based on the state standards starting at 9:45 a.m. Implementation guidelines, expectations and best practices will be discussed from 10:15-11:00 a.m. Knowing that participants will face challenges and need solutions while implementing digital literacy skill instruction, from 11:00 a.m. to 12:00 p.m. participants will discuss these topics and the role the mentor will play in providing support and guidance. After lunch when participants return at 1:00 p.m., mentors and mentees will work together to plan the first 9 weeks instruction and projects for the digital literacy skills of digital citizenship and research and information fluency. A 15 min break will be provided during this working section of the Turn IT On Academy. The day will wrap up with an explanation of what is expected during the remaining sessions of the Turn IT On Academy, reviewing any comments or questions in the parking lot, completing a survey over the 2-day in-person experience and an exit ticket activity about what the participant would like to learn more about.

Each of the five mentor check-in sessions will include discussions about the issues and solutions related to the digital literacy skills instruction and projects as implemented in the classroom. There will be two classroom observations where the mentor observes the mentee teacher providing digital literacy skills instruction or facilitating a project for students. The debriefing sessions will be held at the end of each digital literacy skill unit to provide teachers a chance to share the work their students completed and discuss their experiences. A third in-person session will be held to explain

the PLC model and introduce participants to the resources available to connect with their PLC from the Turn IT On Academy. At the end of the first 9 weeks learning experience, participants will complete a final evaluation virtually.

Roles and Responsibilities

I will deliver the in-person 2-day session, the session regarding the PLC and both debriefing sessions. The mentor check-in sessions are a time for only the mentor and mentee teacher to work together, so I will not be present. I will participate in the PLC to provide guidance, support, and resources. A final copy of the present study will be provided to campus administrators along with a summary of the findings so that the data may be used to further identify areas of need for professional development.

The mentor is responsible for providing guidance to his or her assigned mentee teacher after participating in the in-person sessions. The mentor will attend two classroom observations and five check-in meetings during the Turn IT On Academy. The mentor will be attending both debriefing sessions to provide support for the mentee teacher in discussing the teaching and learning experience with the larger group of participants.

The mentee teacher is responsible for attending the Turn IT On Academy and preparing to teach digital literacy skills to his or her students. As the instructor, it is the mentee teacher's role to prepare the lessons and projects then deliver them to students in the classroom setting. The mentee is to be prepared for each classroom observation and check-in session, so that the sessions can be productive to meeting the needs of the

mentee teacher. The mentee teacher should bring student work samples and a list of issues with solutions to the debriefing sessions.

Project Evaluation Plan

Formative assessment includes evaluation during check points that can provide guidance for change during the learning process. As such, formative evaluations will be conducted during the Turn IT On Academy through exit tickets, discussions, think/pair/share experiences, mentor check-ins, and digitally delivered evaluations. The information gained during these formative assessments will provide the opportunity to further develop and personalize the learning experience for the participant teachers. The online survey provided at the end of the in-person 2-day portion of the academy will provide data and feedback related to the learning experience and additional needs of the participants. At the conclusion of the first 9 weeks professional development experiences of the Turn IT On Academy, mentors and mentee teachers will complete an online evaluation survey to provide feedback on the academy as a whole.

All digitally delivered evaluations will be completed using Google forms so that a spreadsheet with responses will be created and can be evaluated for trends. The surveys will include questions based on a Likert scale, multiple choice response questions, and open-ended questions for gathering additional feedback. The data gathered from the Likert Scale and multiple-choice questions along with the open-ended responses will be used to make modifications to the Turn IT On Academy to better meet the needs of the mentors and mentee teachers. A separate survey will be provided to the mentors to gather

data and feedback based on the experience and needs that they perceived from the mentee teacher they worked with.

Project Goals

One of the main goals of the project is to prepare teachers to provide students with foundational digital literacy skills instruction and application experiences in digital citizenship and research and information fluency. By providing teachers with a mentor and introducing them to a PLC, the goal of giving teachers support to feel confident in implementing digital literacy skills instruction will be met. Teachers being able to transition from digital literacy skills instruction to integrating technology seamlessly into the classroom would be an added benefit. Additionally, teachers who better understand digital literacy skills will be better able to use technology in the classroom while understanding how to be digital citizens themselves. One final goal is to provide equitable professional learning experiences for all participant teachers in the area of digital literacy skills instruction.

Evaluation Goals

The evaluation goals for the project include using the exit ticket and the parking lot activities to gather data on areas of additional need that teachers may be experiencing. Additionally, by providing a survey after the initial 2-day professional development learning experience, the instructor will be able to gain immediate feedback from participant mentors and teachers to provide further support and guidelines related to digital literacy skills instruction. By incorporating debriefing sessions and gathering feedback on the issues experienced during digital literacy skills instruction and projects,

the instructor will be able to identify areas of need for both the mentors and teachers. Identifying these areas of need will allow for more materials to be created to address these needs and for guidance and resources to be shared in the digital PLC.

Stakeholders

The critical stakeholders for the professional development Turn IT On Academy include mentors and teacher mentees. The mentors will include teachers or instructional technology specialists experienced in digital literacy skills instruction and technology integration in the classroom. The teacher mentees will either be newly certified teachers or experienced teachers who want to incorporate technology into their classroom. The Turn IT On Academy's success will prepare teacher mentees to teach digital literacy skills to their students so that there is a foundation of knowledge and skills that will allow for deeper integration of technology into the teaching and learning experience.

Project Implications

The goal of any professional development is to improve the teaching and learning experiences of teachers and students. By providing teachers with modeling and best practices experience with instruction for digital literacy skills, the Turn IT On Academy will prepare teachers for a more equitable implementation for student learning. Teachers will develop a professional learning community that includes others who have attended the Turn IT On Academy and their mentor. This will provide teachers with ongoing support as they continue to develop their pedagogical and content knowledge related to digital literacy skills instruction. By providing student project examples and discussing the problems encountered during the student learning process, teachers will be able to

develop a tool kit that helps them to find guidance for solving problems in the project implementation portion of student learning. The new knowledge and skills related to digital citizenship and research and information fluency that teachers gain during the Turn IT On Academy will provide a foundation to build on for all other digital literacy skills teaching and learning experiences. Professional development learning experiences and implementation support gained through this project will assist teachers in creating a learning environment in their classroom that integrates technology and prepares students with digital literacy skills. Additionally, teachers will develop capacity to be digital citizens in the use and integration of technology in their teaching practice. Social change can occur when students develop digital literacy skills that prepare them to communicate, create and evaluate information in a technology-infused world both safely and effectively.

Section 4: Reflections and Conclusions

I conducted this study to examine the relationship between digital literacy skills instruction and increased skills proficiency for eighth-grade students in the area of digital citizenship and research and information fluency. The results showed that there was a statistically significant relationship between the content knowledge scores and the MSTA posttest scores for both digital citizenship and research and information fluency. However, the relationship between the application experience project scores and the MSTA posttest scores was not able to be computed because the variable for the application experience project scores was a constant 100. The mean scores for the digital citizenship concept area of the MSTA decreased between the pre- and posttest MSTA administrations, which would not be an expected outcome if the content knowledge and application experience project learning experiences had taken place. In contrast, the mean scores for the research and information fluency concept area showed an increase between the pre- and posttest MSTA administrations.

The inconsistencies found during the study led me to design the Turn IT On Academy to provide teachers with a professional learning experience that would address many facets of teaching and learning related to digital literacy skills. The goal in designing this type of learning experience for teachers was to ensure that they gain both content and pedagogical knowledge as well as support from a mentor and can form a PLC that encourages sharing and growth. Additionally, by incorporating a community and support system within the Turn IT On Academy, this professional development has the opportunity to elicit information about other areas of weakness or obstacles that

teachers are experiencing that could lead to understanding sources of the inconsistent study results and future professional development or advocacy opportunities. The strengths and limitations of the project as well as alternate approaches are further discussed in this section.

Project Strengths and Limitations

Professional development is critical to the growth of knowledge and skills for teachers. One strength of the Turn IT On Academy is that it is designed to provide teachers with more knowledge and skills related to digital literacy skills, student learning experiences, and the integration of technology in the classroom. Aldosemani (2019) and Svendsen (2020) both showed that enhancing teacher knowledge and skills will improve classroom teaching and student achievement. During the Turn IT On Academy, teachers not only learn how to better use the state-provided curriculum materials, but they will also develop a better understanding of the challenges they may face when integrating technology into their classrooms. This experience will help prepare them with additional critical-thinking skills to solve similar and other challenges in the moment. By pairing teachers with a mentor to give them guidance and support, they are given the chance to build a foundation for community that will enhance their confidence levels and their pedagogical and content knowledge and skills through access to an ongoing support system. Kahraman and Kuzu (2016) determined that mentoring teachers in technology instruction provided support and yielded positive effects in both the teaching and learning experience. Being provided with this type of learning and support, teachers will be better

able to meet the digital literacy skills learning needs of their students and integrate technology in their classroom as digital citizens.

Analysis of the data in this study showed that there was a correlation between the digital learning experiences and student achievement on the MSTA. With teachers attending the Turn IT On Academy and working with their mentor, they will be better prepared to make the correlation positive and show student knowledge and skills growth in digital literacy. Another strength of this project is that the teacher participants are partnered with a mentor experienced with technology instruction and integration in the classroom. An additional strength is that the mentor will provide planning and feedback support on an individual basis. The Turn IT On Academy is designed around a cohort of learners that will be providing the same digital literacy skills learning experiences using state-adopted curriculum materials along the same timeline. This cohort helps to build a PLC and a stronger support system for participants beyond the mentor/mentee experience. Kahraman and Kuzu (2016) determined that the use of the mentor model helps teachers build a social and academic network and provides them with stronger opportunities for learning and the sharing of ideas. By including teachers from different schools within the same district as part of each cohort, there is a greater opportunity to learn as well as the potential for innovative problem-solving based on campus culture and norms. This inclusive learning environment for teachers can lead towards more active participation in discussions, which Canaran and Mirici (2020) determined leads to more enhanced student learning experiences. During the Turn IT On Academy, participants will experience the learning as a student would, in an abbreviated way, that will model

best practices that they can then implement in their classroom. Sessions are provided for teachers and their mentors to discuss the classroom experiences during the first 9 weeks of school so that all participants can learn from and support each other.

Because the learning experience for teachers spans a 9-week period, it was important to ensure that time and distance did not become a burden on the participants. The Turn IT On Academy will provide teachers with in-person and virtual learning opportunities throughout the first 9 weeks of school. Because teachers will be from different schools within the same district, they will have to travel to the in-person sessions, which is a limitation in the project. An additional limitation to the professional development program is ensuring that no other campus activities are planned on the days that the participants must attend the Turn IT On Academy sessions. A final limitation to the project is that the professional learning experience is limited to the first 9 weeks of school and only covers two digital literacy skills areas. By extending the Turn IT On Academy for a full school year, the Turn IT On Academy would provide support for teaching and learning that extends to all digital literacy skills established by the TA-TEKS.

Recommendations for Alternative Approaches

When examining the relationship between digital literacy skills instruction and increased skills proficiency for students, the findings of this study showed that a gap existed in the assigning, completing, and evaluating process of the state-adopted curriculum materials. One explanation for this gap may be the depth of pedagogical and content knowledge and skills of the teachers as it pertains to digital citizenship and

research and information fluency. The Turn IT On Academy attempts to build capacity by addressing teacher needs related to pedagogical and content knowledge and skills as well as providing support in the classroom to improve the student learning experience.

An additional approach to solving the gap in digital literacy skills would be to extend the Turn IT On Academy experience through an entire school year and include digital literacy skills beyond digital citizenship and research and information fluency. This extension would provide additional support to teachers as they continue to integrate technology into their classrooms and would positively affect student knowledge and skills for additional areas of digital literacy. The additional knowledge and skills would better prepare students to learn, work, and thrive in a digital society.

A potential problem that could have caused the gap found in the data related to the application experiences for student learning is the required use of a provided rubric to evaluate student learning. If a teacher has not received training in use of the rubric for evaluation, there could be a lack of ability and confidence in knowing how to properly evaluate student knowledge and skills. Auburn University (2020) identified a concern with using rubrics when the expectations of how to use the rubric have not been explained. A different approach to addressing the gap in digital literacy skills would be to create a program evaluation to determine why the application experience of the learning process is not being evaluated based on the rubrics provided with the curriculum. Additionally, determining teachers' perceived issues or concerns about using projects that demonstrate student knowledge and skills would allow for professional development to be designed to address those concerns. By evaluating and identifying teacher concerns

with the application experiences and rubrics for grading, the district could ensure that both the needs of teachers and students are being met.

Scholarship, Project Development and Evaluation, and Leadership and Change

The research process for this study and the resulting Turn IT On Academy project challenged me to learn more about how to design and conduct research based on identified and perceived problems. Analyzing the historical data proved to be more challenging than I initially thought it would be. The quantitative aspect of my research included missing data points that would have potentially had explanations with a qualitative study. Understanding and accepting that the explanation to a problem may require both quantitative and qualitative data was a concept that I realized to be more valuable.

Learning to evaluate present data without speculating about missing data points provided an opportunity for me to learn more about data analysis techniques using SPSS and statistics. The entire learning and research experience of completing this study and project reminded me of the value that data holds in making decisions and driving change. Whether it is life experiences that build memories or evaluating student scores on an assessment, data can be identified and analyzed to help make decisions. As a researcher, conducting data dives and digging deep to see what stories the data can tell is what made this research and evaluation process so interesting to me. The overall learning experience has inspired me to have new ideas that can lead to change.

Technology and digital literacies were key functions in my career in the financial industry. When I became a teacher, I saw that the field of education was not taking

advantage of the tools and literacies available to assist teachers in their daily activities and students in their learning experiences. Technology and learning expectations have changed and improved in the past 20 years of my time in the field of education, which led to specific concern when I saw that student achievement on the MSTA was an issue. This concern and the advancements in technology that could enhance the learning experience led me to evaluate the data and conduct research to better understand the story behind what I was seeing.

I have grown as an educator, scholar, and leader through conducting this study and developing the project. Carrying out the literature review on professional development inspired me to reflect on the professional development experiences that I learned from and those that I do not readily remember attending. This helped me to define the research topics and later design the Turn IT On Academy based on best practices and successful experiences for learning. Advocating for what is best for the learner, whether adult or child, will be a guiding force in how I advocate for changes in education. Learning is a lifelong experience and being digitally literate is a life skill that can help facilitate change.

Reflection on Importance of the Work

In this study, I collected and evaluated data that led to a project plan based on the story as I understood it to be at the time. Advocating for a change in policy to ensure that students would be guaranteed to learn digital literacy skills as a life skill during the school experience appeared to be the most valuable path for change. As I initially worked on a policy paper for my project, COVID-19 began to affect teaching and learning

experiences, which enlightened a potentially different story that the data could be telling. The story that I began to understand was that teachers did not have the pedagogical and content knowledge or skills to have prepared their students for a quick change in how the learning experience needed to take place in a digital environment. Neither teachers nor students were prepared for the online learning experience despite the state-adopted curriculum materials that were provided to teach digital literacy skills and previous professional development on instructional technology.

The real-time information and data that were being provided as districts tried to work through the challenges they faced from COVID-19 brought the realization that not only did students need the digital literacy skills but teachers did too. Teachers needed to be able to use the curriculum materials they had access to in order to better prepare their students for the digital environment they were facing for learning in the moment. They were no longer just preparing students to communicate, create, and evaluate information in a technology-infused world, they needed to prepare students to do this both safely and effectively for classroom learning too.

I have learned to value the story that data can tell and how that story can lead to finding a way towards change. Taking the time to conduct research and evaluate the data in an effort to better understand how a problem affects the involved stakeholders is a key factor in understanding the story being told. The most important aspect from my learning experience that I will take with me into advocating for change is that data can tell many stories and you must be open to discovering and understanding the stories so that positive change can happen.

Implications, Applications, and Directions for Future Research

The project I designed for this study is the Turn IT On Academy, which is intended to begin in the summer and support teachers throughout the first 9 weeks of school as they teach students about digital citizenship and research and information fluency. The goal of this academy model is to provide teachers with the pedagogical and content knowledge and skills needed to teach students how to communicate, create, and evaluate information in a technology-infused world both safely and effectively. The Turn IT On Academy can positively change the classroom experience for both teachers and students. For teachers, it provides professional learning experiences and develops a community of support for teaching digital literacy skills and integrating technology into the classroom. For students, it ensures that the digital citizenship and research and information fluency learning experiences are provided based on state standards and use state-adopted curriculum materials with which, students will have the best opportunity to transform their own learning by using technology.

By providing teachers with the guidance to use the state-adopted curriculum materials and the support of a mentor and a PLC, teachers will be better able and prepared to meet student needs. A recommendation for future research would be to conduct a program evaluation of the Turn IT On Academy to identify if this model could be used for professional development related to other concept areas beyond digital literacy skills.

Conclusion

During the process of conducting this study and designing the Turn IT On Academy professional development learning experience, I have reflected on my own learning along the way. I have been reminded that wondering about something often leads to inspiration to want to learn more. With that wonder can come wisdom. The wisdom that I gained from this study and project is that technology is a tool that requires the user to have knowledge and skills to be able to gain value from using the tool. Being digitally literate is founded on the knowledge and skills that allow a user of technology to find, evaluate, create, and communicate information (Heitin, 2016). The Turn IT On Academy is designed to provide teachers with both pedagogical and content knowledge along with the skills needed to teach their students how to find, evaluate, create, and communicate in a digitally infused world. As students continue to move along the continuum of being lifelong learners, they will not only learn to use technology but will understand how to transform their learning through the safe and effective use of technology.

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Appendix: The Project

This professional development experience, called the "Turn IT On Academy," is a blended learning experience that provides both in person and digitally delivered learning experiences, mentor/coaching for curriculum design and support, building a professional learning community and opportunities to showcase curriculum in action along with student products for digital literacy skills. The academy is based on research conducted about professional development and a study completed to evaluate the effectiveness of using strategic digital literacy skills instruction and application experiences for students as a way to develop increased skill proficiencies in digital citizenship and research and information fluency.

Target Audience

The target audience for the project is in-service teachers who are responsible for teaching and learning related to digital literacy skills. Each teacher will be paired with a mentor who will also be in attendance.

Turn IT On Academy Goals

1. Provide teachers of digital literacy skills with the knowledge, skills, and confidence to implement instruction and evaluate student learning related to essential digital literacy skills and the Texas Essential Knowledge and Skills for Technology Applications (TA-TEKS) and International Society of Technology in Education (ISTE) standards.
2. Provide teachers with ongoing support from mentors/coaches for curriculum design of student learning experiences as they implement digital literacy skills

instruction in their classroom.

3. Provide teachers with a collaborative continuing education experience through professional learning communities (PLCs) and interaction with colleagues from the Turn IT On Academy.
4. Provide teachers with experiential learning opportunities to see digital literacy skills instruction in practice and student product results from their learning experiences.

Materials Needed

Laptops, Internet connectivity, access to the TA-TEKS for applicable grade level and the ISTE standards for students, chart paper, butcher paper, markers, post-it notes, pens, pencils, note paper, Backchannel Chat subscription, Poll Everywhere credentials

Budget

Need	Cost
Backchannel Chat subscription	$15
Poll Everywhere credentials	$0
Light breakfast, juice, water for 20 – Day 1	$120
Light breakfast, juice, water for 20 – Day 2	$120
Supplies – chart paper, butcher paper, markers, post-it notes, pens, pencils, note paper	$100
Location – school district training facility or campus	$0
Trainer – school district employee as part of regular training duties	$0
Total Cost	$355

Turn IT On Academy Timeline

Activity	Basic Specifics for Activity	Start Date/Time	Completion Date/Time
Invitation to Participants	District distribution of information about the Turn IT On Academy and link for registration	Early May and End of May	July 20
Registration Open	Online registration available	Early May	July 20
In Person Session #1 - am (4 hours)	Teacher/Mentor Sign, Introduction, Getting to Know You, What's the Buzz about Digital Literacy Skills?	July 27 8:00 am	July 27 12:00 pm
In Person Session #1 - pm (4 hours)	If You Build It, They Will Learn, Can You See It?, Let's Go Back In Time, Share IT, Parking Lot Review, Homework, Exit Ticket Activity	July 27 1:00 pm	July 27 5:00 pm
In Person Session #2 - am (4 hours)	Teacher/Mentor Arrival, Time to Dive In, Debrief of Student Learning Experience, Think/Pair/Share, You've Got the	July 28 8:00 am	July 28 12:00 pm

	Skills, Implementation is the Key to Turning IT On, What's the Catch?,		
In Person Session #2 - pm (4 hours)	What's the Plan?, Turn IT On Academy – We're Just Getting Started, Parking Lot Review, Wrap Up & Digital Survey, Exit Ticket Activity – Stick It to the Wall	July 28 1:00 pm	July 28 5:00 pm
Mentor check-in #1 (1.5 hours)	In person, Review of concepts/plan for back to school, Best Practices for teaching about digital citizenship via lessons/project for students, model/practice with feedback	August 11 1:00 pm	August 11 2:30 pm
Classroom Observation #1	Mentor to visit classroom for observation of teaching in action	August 26	August 26
Mentor check-in #2 (1 hour)	Virtual, discuss issues/solutions with focus on aspects of digital citizenship instruction	Sept. 2 1 hour	Sept. 2 1 hour
Mentor check-in #3 (1 hour)	Virtual, discuss issues/solutions with a focus on digital citizenship project	Sept. 9 1 hour	Sept. 9 1 hour
Debrief #1 (1.5 hours)	In person, Welcome and sign in, There's Always A Way, Evaluate for Change, Exit Ticket	Sept. 16 3:30	Sept. 16 5:00
In Person Session #3 (1.5 hours)	Welcome and sign in, We're Here for You, Exit Ticket Activity – Stick It to the Wall	Sept. 23 3:30	Sept. 23 5:00
Mentor check-in #4 (1 hour)	Virtual, Best Practices for teaching about research and information fluency via lessons/project for students, model/practice with feedback	Sept. 30 1 hour	Sept. 30 1 hour
Classroom Observation #2	Mentor to visit classroom for observation of teaching in action	Oct. 7	Oct. 7
Mentor check-in #5 (1 hour)	Virtual, discuss issues/solutions with a focus on research and information fluency instruction and project	Oct. 14 1 hour	Oct. 14 1 hour
Debrief #2 (1.5 hours)	In person, Welcome and sign in, There's Always A Way, Evaluate for Change, Exit Ticket	Oct. 21 3:30	Oct. 21 5:00

1st Nine Weeks Wrap Up	Virtual, Final Evaluation of 1st Nine Weeks Turn IT On Academy	Oct. 21	Oct. 28

Turn IT On Academy Agendas

In Person Session #1 Agenda

Objectives:

- What is the Turn IT On Academy and why are we participating?
- What are digital literacy skills?
- Why are digital literacy skills important for teaching and learning?
- What do digital literacy skills look like from the student's perspective?

8:00-8:30 AM	Teacher/Mentor Arrival and Sign In (slide 1) • Initial open seating with note that we will be finding mentors/mentees and moving after the introduction • Light breakfast and juice/water
8:30-9:30 AM	Introduction: • Trainer introductions and Meeting Protocols (slide 2, 3 and 4) • Turn IT On Academy expectations and timeline (slide 5) • Plan for the day (Slide 6) • Backchannel Chat (explanation of how to use and where to find) • Live Parking Lot (explanation of how to use and where located in the room)
9:30-10:30 AM	Getting to Know You: • Who's Here? (using Poll Everywhere to identify participant role, subject area focus and campus) (Slide 7) • Find Your Match (time to locate mentor/mentee and move tables) (slide 8) • Key Learning Experience (get to know your table group) (slide 9)
10:30-10:45 AM	Morning break (slide 10)
10:45 AM-12:00 PM	What's the Buzz about Digital Literacy Skills? • View Ode to Pencil Chat video and Discuss (https://youtu.be/KiG6_H-uQKM) (slide 11) • What are digital literacy skills (slide 12) • Final Word Protocol (https://youtu.be/A8yQPoTcZ78) (slides 13-15) • Understanding the TA-TEKS standards and student expectations

	(slide 16)
12:00-1:00 PM	Lunch break (slide 17)
1:00-2:00 PM	If You Build It, They Will Learn • What Is Effective Learning? (slide 18) • Science of Learning (slide 19) • Benefits of digital literacy skills in the classroom (slide 20) Can You See IT? (slide 21) • Gallery Walk to identify the digital literacy skills standards in student products (slide 22)
1:45-2:45 PM	Let's Go Back in Time (slide 23) • Participants impersonate the learning experience of a student • Participants independently complete a digital literacy skill lesson • Participants do a think/pair/share with table group to discuss the concepts learned and the related standards
2:45-3:00 PM	Afternoon break (slide 24)
2:45-3:45 PM	Let's Go Back in Time, Part 2 (slide 25) • Participants work as mentor/mentee on a student product example
3:45-4:30 PM	Share IT (slide 26) • Participants share their finished products
4:30-5:00	Parking Lot Review (slide 27) • QA based on what is in the Parking Lot Homework • Think about your day • Jot down questions and ideas Exit Ticket Activity - Stick It to the Wall • Using a Post-It note, participant will list one new thing they learned and one thing that surprised them

Welcome to the Turn IT On Academy!

- Sign in
- Grab some breakfast and a drink
- Find a seat
- We'll get started at 8:30 am

1

Meeting Norms

- Arrive on time so we can end on time
- Listen with an open mind
- Be kind, courteous and respectful
- Participate and share ideas
- Phones on vibrate or silent
- Remember - Learning can be fun!!

3

Turn IT On Academy

Where Digital Literacy Skills instruction begins and Instructional Technology turns on.

Day 1 OBJECTIVES

- What is the Turn IT On Academy and why are we participating?
- What are digital literacy skills?
- Why are digital literacy skills important for teaching and learning?
- What do digital literacy skills look like from the student's perspective?

4

Turn IT On Academy

Expectations

- Participate in all academy activities
- Prepare and implement lessons and projects related to digital literacy skills
- Share student products and classroom experiences
- Actively engage with mentor and other cohort teachers

Activities

- 2-day in person session: July
- 5 mentor check-ins (virtual): July-Oct
- 2 classroom observations: July-Oct
- 2 debrief sessions: July-Oct
- Afternoon in person session: Sept
- Digital PLC: Ongoing
- Wrap up session (virtual): Oct

5

Who's Here?

1. Please take out your cell phone.
2. Scan this QR code to open the survey.

https://PollEv.com/surveys/hcpi4lI3PCH0ol5HdiVL/respond

7

Day 1 – What's The Plan?

Today's Schedule

8:30-12:00 Morning Session
10:30-10:45 Break
12:00-1:00 Lunch on your own
1:00-5:00 Afternoon Session
2:45-3:00 Break

In Between Communication

- Ongoing virtual chat space via Backchannelchat.com
- Live Parking Lot

6

Find Your Match

- Look at the back of your name tag
- The technology related image will help mentor/mentees find their match
- The color sticker shows you which table is yours for today and tomorrow

Yes, these are all types of technology.

8

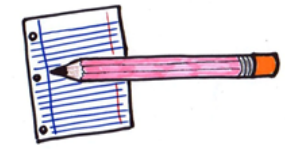
Key Learning Experience

1. Discuss with your match, a key learning experience that you've had.
2. Share with your table group.

"I was challenged..." "I needed help..." "I lost track of time..."

9

What's the Buzz about Digital Literacy Skills?



11

15 Minutes

10

What Are Digital Literacy Skills?

Digital Literacy as defined by the American Library Association: "Digital literacy is the ability to use information and communication technologies to find, evaluate, create, and communicate information, requiring both cognitive and technical skills."

Digital Literacy Skills are the technical and cognitive skills needed to become digitally literate by applying digital knowledge and skills in real world experiences.

12

Final Word Protocol

As a table group:

1. As we watch the video, take notes to identify key elements related to essential elements of digital literacies (17 min)
2. One person at the table will state the key element they identified (sentence) but will not elaborate on it.
3. Others at the table have one minute to respond. Agree, disagree, offer examples, raise a question, or otherwise share thoughts. No one else talks, until it is their turn to respond.
4. Once everyone has responded, the first person who shared has "the last word" by responding and summarizing what they heard and learned.

13

Final Word Protocol

As a table group:

1. As we watch the video, take notes to identify key elements related to essential elements of digital literacies (17 min)
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4. Once everyone has responded, the first person who shared has "the last word" by responding and summarizing what they heard and learned.
5. Repeat until everyone at the table has shared and had "the last word."

15

Essential Elements of Digital Literacies – a TEDx Talk

14

Understanding the TA-TEKS

Technology Applications – Texas Essential Knowledge and Skills

- Creativity and Innovation
- Communication and Collaboration
- Research and Information Fluency
- Critical thinking, Problem Solving, and Decision Making
- Digital Citizenship
- Technology Operations and Concepts

http://ritter.tea.state.tx.us/rules/tac/chapter126/

16

12:00-1:00

17

Science of Learning

Uses all three areas of the brain to help learn and remember what was learned.

19

What Is Effective Learning?

- Students use what they learn outside the classroom. They apply knowledge in the "real world."
- Students have the sense that they have learned something and understand what they learned.
- Conceptual understanding and not memorization is key. Students need to understand the principles and be able to apply them to new contexts.
- Students have the tools and motivation to continue to learn independently.

18

Benefits of Digital Literacy Skills in the Classroom

- Become digital citizen and be responsible for how technology is used
- Boost engagement
- Options for lifelong learning
- Producers and consumers
- Digital society needs and expectations

20

Can You See IT?

Gallery Walk – It's not just for art!!

1. Walk around the room and look at the student products on the wall.
2. For each item note the following:
   - How does this student product relate to the TA-TEKS?
   - Which standard does it tie to?
   - What type of technology do you think was used to create this product?
   - What core concept area does this tie to?
3. Be ready to discuss with your table group.

21

Let's Go Back In Time

1. You will log in using the provided student credentials
2. You will complete the digital literacy skills lessons assigned to you
3. When your table group is done with their lessons:
   - Do a think/pair/shared to discuss the concepts you learned
   - Discuss the standards that you think were covered in the lessons you completed
4. We will debrief as a whole group

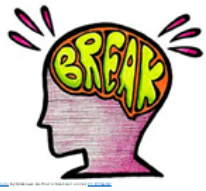
23

Gallery Walk Talk

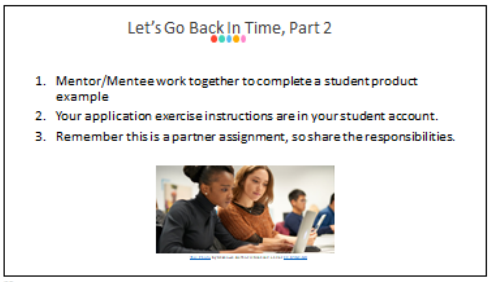
- What is a gallery walk?
- Why is this a good way to introduce a lesson/unit or review completed work?
- What did you learn from your gallery walk?
- What are some other ways that you could implement this?

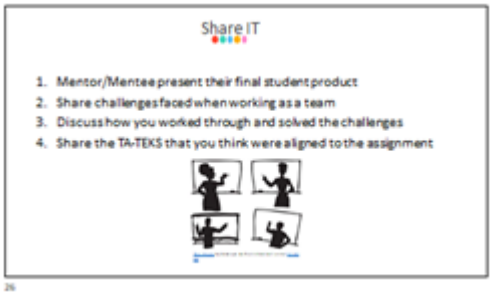
22

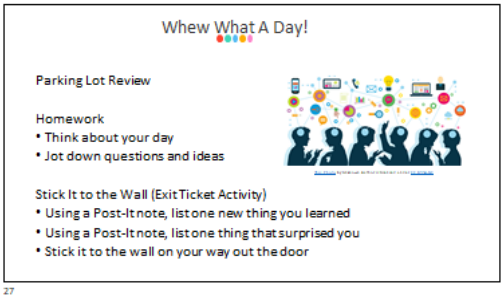
15 minutes



24







In Person Session #2 Agenda

Objectives:

- Understanding the curriculum materials available for digital literacy skills instruction
- How to implement digital literacy skills into an already packed day of teaching and learning
- How to find a balance between challenges and solutions for digital literacy skills instruction
- Understanding and preparing for the 1st nine weeks

8:00-8:30 AM	Teacher/Mentor Arrival and Sign In (slides 29-31) • Note to sit with your table group from day 1 • Light breakfast and juice/water • Complete the puzzle at table and discuss how it applies to digital literacy skills
8:30-8:45 AM	Time to Dive In • Plan for the day (slide 32) • Sharing thoughts from breakfast puzzle activity (slide 33)
8:45-9:30 AM	Debrief of Student Learning Experience (slide 34) Think/Pair/Share with table group: • What did you like?

	• What caused pain points? • What did you learn? Share out of table thoughts
9:30-10:00 AM	You've Got the Skills (slide 35) • Explaining the state adopted curriculum materials for digital literacy skills Expectations for learning based on the TA-TEKS
10:00-10:15 AM	Morning Break
10:15-11:00 AM	Implementation is the Key to Turning IT On (slide 36) • District expectations for implementation • Best Practices for digital literacy skills instruction • Best Practices for evaluating digital literacy skills learning
11:00 AM – 12:00 PM	What's the Catch? (slide 37) • Discussing challenges and solutions to implementing digital literacy skills instruction • Mentor role in support
12:00-1:00 PM	Lunch break
1:00-2:30 PM	What's the Plan? (slide 38) • Mentor/Mentee plan for the 1st nine weeks • Lessons to complete • Projects to complete • How to evaluate the learning
2:30-2:45 PM	Afternoon break
2:45-4:00 PM	What's the Plan? Contd.
4:00-4:30	Turn IT On Academy – We're Just Getting Started (slide 39) • 1st Nine Weeks meeting schedule • Expectations for interaction and continued PD • Where to find support and help (mentor and mentee)
4:30-5:00 PM	Parking Lot Review (slide 40) • QA based on what is in the Parking Lot Wrap Up & Digital Survey (slide 41) Exit Ticket Activity - Stick It to the Wall (slide 42) • Using a Post-It note, participant will list one thing they still want to know

Welcome Back to the Turn IT On Academy!

- Sign in
- Grab some breakfast and a drink
- Sit at your color-coded table
- Complete the puzzle and discuss how it applies to digital literacy skills
- We'll get started at 8:30 am

29

Meeting Norms

- Arrive on time so we can end on time
- Listen with an open mind
- Be kind, courteous and respectful
- Participate and share ideas
- Phones on vibrate or silent
- Remember - Learning can be fun!!

30

Day 2 OBJECTIVES

- What are the curriculum materials available for digital literacy skills instruction?
- How do I implement digital literacy skills into an already packed day of teaching and learning?
- How do I find a balance between challenges and solutions for digital literacy skills instruction?
- What do I do to prepare for the 1st nine weeks?

31

Day 2 – What's The Plan?

Today's Schedule

8:30-12:00 Morning Session
10:00-10:15 Break
12:00-1:00 Lunch on your own
1:00-5:00 Afternoon Session
2:30-2:45 Break

In Between Communication

- Ongoing virtual chat space via Backchannelchat.com
- Live Parking Lot

32

IT Can Be Puzzling

Ease of Use
What made this easy or difficult?

Types of Tools
What tools did you need to be successful in completing your task?

Concept Area
What topics align to this activity?

Application of Skills
What skills did you use?

33

You've Got the Skills

- TA-TEKS
  - Standards
  - Student Expectations
  - Core curriculum integration
- Inquiry Powered by EasyTech
  - State adopted curriculum materials
  - 100% aligned to TA-TEKS
  - ISTE Seal of Alignment
  - Direct Instruction, Practice, Application of Skills
  - Digitally delivered

35

Student Learning Experience

Debrief

Positive
- What did you like about the student learning experience?

Negative
- What challenges did you face during the student learning experience?
- How did you overcome those challenges?

Experience
- What did you learn?

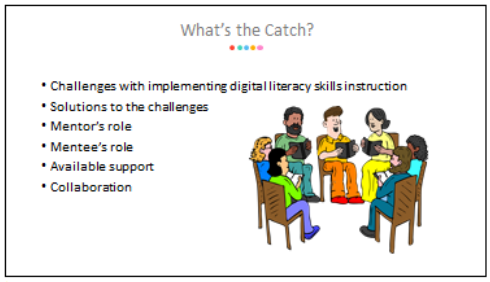
Group Share
- As a table group, determine 1 key point from each and share.

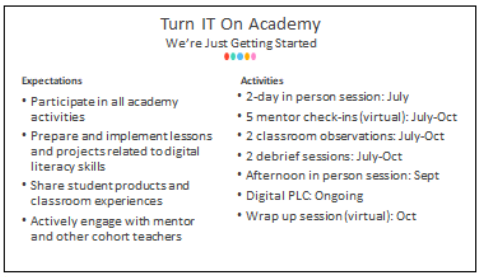
34

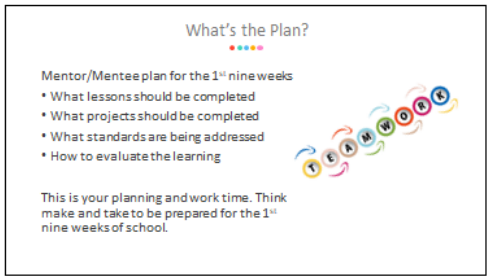
Implementation is the Key to Turning IT On

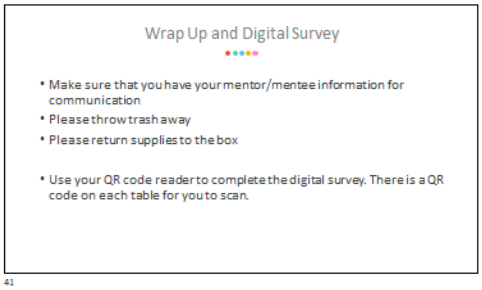
- Data from the Middle School TechLiteracy Assessment
- Study findings
- District expectations for implementation
- Best Practices for digital literacy skills instruction
- Best Practices for evaluating digital literacy skills learning

36









Digital Survey Questions:

1. What role do you hold as part of the Turn IT On Academy?
    a. Teacher
    b. Mentor
2. Did this 2-day professional learning experience meet your needs?
3. What aspect of the 2-day professional learning experience did you enjoy the most?
4. What aspect of the 2-day professional learning experience would you have liked

to be different? What changes would you make?

5. The learning experience met my needs. (5-point Likert Scale)

Mentor Check-in #1 (In Person)

During this session, the following will be included:

- Review of concepts and plan created during day 2 of the Academy as preparation for back to school
- Discuss best practices for teaching about digital citizenship using the online lessons.
- Discuss best practices for utilizing a project for students to complete and demonstrate their ability to apply what has been learned.
- Mentor/mentee will model and practice digital literacy skills instruction with feedback as preparation for digital citizenship lessons and project with students.

Mentor Check-in #2 (Virtual)

During this session, the following will be included:

- Discussion about issues encountered during instruction of digital citizenship skills.
- Discussion about solutions used and further guidance needed with a focus on aspects of digital citizenship instruction.

Mentor Check-in #3 (Virtual)

During this session, the following will be included:

- Discussion about issues encountered during the digital citizenship skills project.
- Discussion about solutions used and further guidance needed with a focus on

aspects of digital citizenship project.

- Reminder to prepare their list of problems/solutions encountered during the digital citizenship unit and to gather student work examples.

Debrief #1 (In Person)

Objectives:

- Evaluate student created products to identify standards, application of knowledge and skills
- Overcoming challenges related to teaching/learning of digital citizenship
- How to adjust based on need

3:30-4:00 PM	Welcome and sign in (slide 44-46)
	• Reminder about in person meeting protocols
	• Attendees hang 3 examples of student work on the walls based on an assigned area.
	• Gallery Walk to view and discuss using these questions (slide 47)
	  o Are the standards covered evident in the student product created?
	  o Does the student work product demonstrate application of knowledge and skills?
	  o What core concept area (if any) was tied to the product?

4:00-4:30 PM	There's Always A Way (slide 48) • In table groups of 4, each mentee presents their biggest challenge from the teaching and learning experience for digital citizenship and how they solved it. • Discussion with table group about similar experiences and how any issues were solved.
4:30-4:50 PM	Evaluate for Change (slide 49) • In table groups, attendees discuss ways to improve the instruction and/or project from the digital citizenship unit.
4:50-5:00 PM	Exit Ticket (slide 50) • What do you still need/want to know?

Turn IT On Academy

Debrief #1

- Sign in
- Sit as mentor/mentee at any table
- We'll get started at 3:30 pm

Debrief #1 OBJECTIVES

- Evaluate student created products to identify standards, application of knowledge and skills
- Overcoming challenges related to teaching/learning of digital citizenship
- How to adjust based on need (just in time)

46

Meeting Norms

- Arrive on time so we can end on time
- Listen with an open mind
- Be kind, courteous and respectful
- Participate and share ideas
- Phones on vibrate or silent
- Remember - Learning can be fun!!

45

Gallery Walk

Walk around the room and look at the student products on the wall.

1. For each item note the following:
   - What standards and student expectations were aligned to this project?
   - Are the standards and student expectations evident in the student product created?
   - Does the student work product demonstrate application of knowledge and skills?
   - What core concept area (if any) was tied to the product?
2. Be ready to discuss with your table group.

47

There's Always A Way

- Work with your table group.
- Each mentee presents their biggest challenge from the teaching and learning experience for digital citizenship and how they solved it.
- Discuss as a table group similar experiences and how any issues were solved.

48

Stick It To The Wall

Exit Ticket

Grab a Post-It note or two (more if you'd like) to write your thoughts.

What do you still need/want to know?

Stick it to the wall on your way out the door.

50

Evaluate for Change

- Work with your table group.
- Discuss ways to improve the instructional aspects of the learning experience.
- Discuss ways to improve the project aspect of the learning experience.

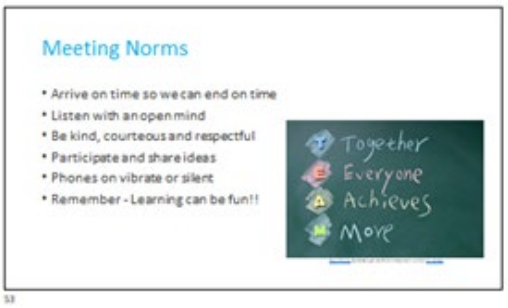
49

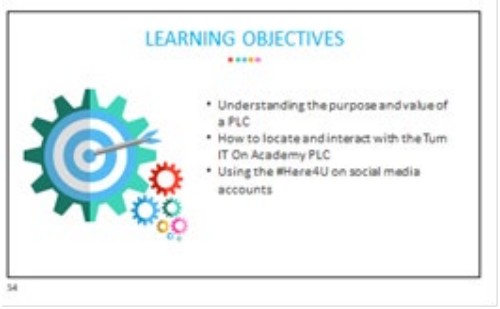
In Person Session #3

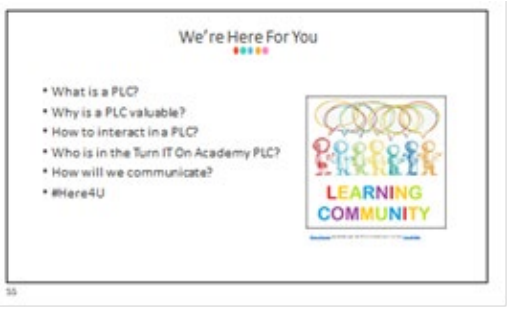
Objectives:

- Understanding the purpose and value of a PLC
- How to locate and interact with the Turn IT On Academy PLC
- Using the #Here4U on social media accounts

3:30-3:40 PM	Welcome and sign in (slide 52-54) • Reminder about in person meeting protocols • Backchannel Chat reminder
3:40-4:50 PM	We're Here for You (slide 55) • What is a Professional Learning Community (PLC)? • Why is a PLC valuable? • How to interact in a PLC? • Who is in this Turn IT On Academy PLC? • How will we communicate? • #Here4U
4:50-5:00 PM	Exit Ticket Activity - Stick It to the Wall (slide 56) • Using a Post-It note, participant will write down things that they still want to know about PLCs or communicating with the Academy PLC.







Mentor Check-in #4 (Virtual)

During this session, the following will be included:

- Discuss best practices for teaching about research and information fluency using the online lessons.
- Discuss best practices for utilizing a project for students to complete and demonstrate their ability to apply what has been learned.
- Mentor/mentee will model and practice digital literacy skills instruction with feedback as preparation for research and information fluency lessons and project with students.

Mentor Check-in #5 (Virtual)

During this session, the following will be included:

- Discussion about issues encountered during instruction of research and information fluency skills and related project.
- Discussion about solutions used and further guidance needed with a focus on aspects of research and information fluency instruction and applying knowledge and skills through a project.

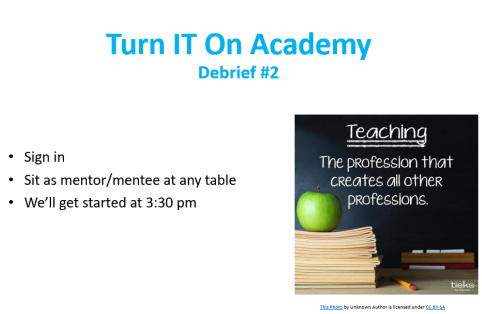
Debrief #2

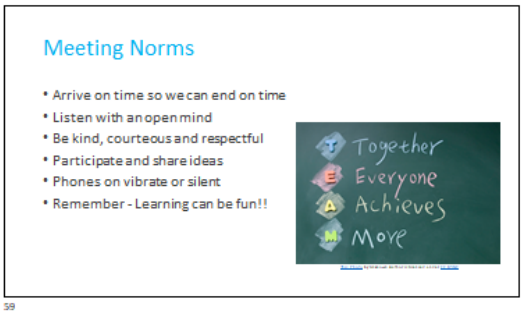
Objectives:

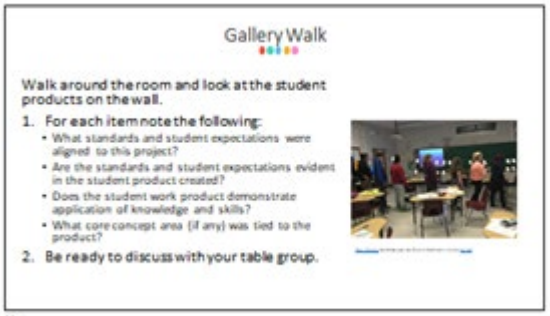
- Evaluate student created products to identify standards, application of knowledge and skills
- Overcoming challenges related to teaching/learning of research and information fluency
- How to adjust based on need

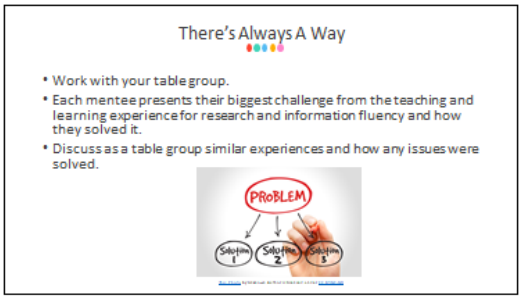
3:30-4:00 PM	Welcome and sign in (slide 58-60)
	• Reminder about in person meeting protocols
	• Attendees hang 3 examples of student work on the walls based on an assigned area.
	• Gallery Walk to view and discuss using these questions (slide 61)
	  ○ Are the standards covered evident in the student product created?
	  ○ Does the student work product demonstrate application of knowledge and skills?
	  ○ What core concept area (if any) was tied to the product?

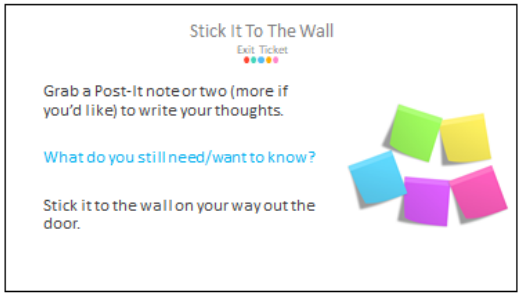
4:00-4:30 PM	There's Always A Way (slide 62) • In table groups of 4, each mentee presents their biggest challenge from the teaching and learning experience for research and information fluency and how they solved it. • Discussion with table group about similar experiences and how any issues were solved.
4:30-4:50 PM	Evaluate for Change (slide 63) • In table groups, attendees discuss ways to improve the instruction and/or project from the research and information fluency unit.
4:50-5:00 PM	Exit Ticket (slide 64) • What do you still need/want to know?











First Nine Weeks Wrap Up (Virtual)

Participants (mentor and mentee) complete a virtual survey evaluating their experiences and learning throughout the 1st nine weeks of school as related to the Turn IT On Academy.

Teacher Digital Survey Questions:

1. What is your name?
2. What is your campus?
3. What role do you hold as part of the Turn IT On Academy?
    a. Teacher
    b. Mentor
4. Did the Turn IT On Academy meet your needs?
5. What aspect of the Turn IT On Academy did you enjoy the most?
6. What aspect of the Turn IT On Academy would you have liked to be different? What changes would you make?
7. The learning experience during the 1st nine weeks of the Turn IT On Academy met my needs. (5 point Likert Scale)
8. I gained knowledge and skills that will help me implement digital literacy skills instruction and projects into my environment. (5 point Likert Scale)
9. I will use the knowledge and skills gained from the Turn IT On Academy in the following ways: (open ended question)
10. I am comfortable interacting with the PLC. (5 point Likert Scale)
11. I felt supported by my mentor. (5 point Likert Scale)
12. To further develop my knowledge and skills with implementing digital literacy skills, I need the following: (open ended question)

Mentor Digital Survey Questions:

1. What is your name?
2. What is your campus?

3. What role do you hold as part of the Turn IT On Academy?
    a. Teacher
    b. Mentor
4. What aspect of the Turn IT On Academy did you enjoy the most?
5. What aspect of the Turn IT On Academy would you have liked to be different? What changes would you make?
6. Where did your mentee exhibit the most growth from their Turn IT On Academy experience?
7. Where did your mentee exhibit the least growth from their Turn IT On Academy experience?
8. What training could you benefit from to support you as a mentor?
9. What additional training could your mentee benefit from?
10. Please provide any additional comments or suggestions.