Spring 3-2020

A Mixed Methods Study of Educators' Perceptions and Comfort Levels of Professional Learning in a Blended Model

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by

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A Dissertation submitted to the Education Faculty of Lindenwood University

In partial fulfillment of the requirements for the

Degree of

Doctor of Education

School of Education

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This dissertation has been approved in partial fulfillment of the requirements for the degree of

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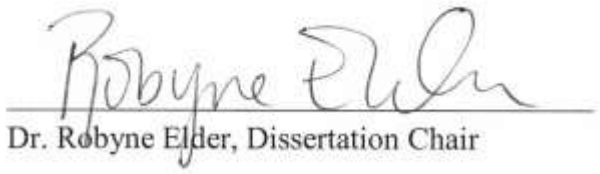

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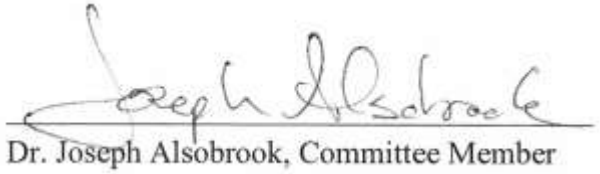

Dr. Joseph Alsobrook, Committee Member — 3/6/2020 Date

Declaration of Originality

I do hereby declare and attest to the fact that this is an original study based solely upon my own scholarly work here at Lindenwood University and that I have not submitted it for any other college or university course or degree here or elsewhere.

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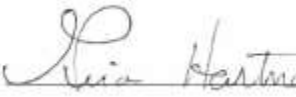
Signature:  Date: 3-6-20

Acknowledgements

This accomplishment would not have been possible without the support and encouragement from my family. My husband, Tim, has always been my biggest supporter, passing along words of encouragement every step of the way. He has supported me over the years by encouraging me to be the best I can be and pushing me to continue my education. None of this would have been possible without the support of my parents growing up, and them making financial sacrifices to support me as I took the first step going to college and earning a Bachelor's degree. My two wonderful children, Isaac and Alex, have been very understanding when my time has been consumed taking classes, researching, or sitting for long hours at my computer in my office. Finally, I would like to express my appreciation to my chairperson, Dr. Robyne Elder, and my committee members, Dr. Kevin Winslow and Dr. Joseph Alsobrook.

Abstract

As technology evolves in our society and schools, the professional learning designed and facilitated for educators must also evolve. The purpose of this mixed methods, multi-state study was to examine the impact and effectiveness of a blended professional development model. The researcher investigated educators' skills, comfort levels, and attitudes when participating in a sustained blended professional development model by using pre- and post-surveys and questionnaires, in addition to interviews at the conclusion of the nine-month study. Furthermore, the researcher sought to identify characteristics of a blended professional development model that educators deemed most important to changing their practice. Participants in the study were educators from three different school districts in three different states around the United States. Results from the study revealed significant improvement in educators' comfort levels when both designing and implementing digital lessons after they participated in an ongoing blended professional development program. In addition, the four characteristics of a blended professional development model that were identified to have the greatest impact on educators' professional practices were (1) learning at their own pace, (2) participating in an active learning model that engaged them directly in the new instructional practices they were learning, (3) being part of a collaborative learning community both in a physical and digital environment, and (4) being able to immediately apply their new learning because the professional development content was relevant and meaningful to them. Furthermore, findings from the study revealed that educators had a deeper level of integration and usage with the learning management system they were using in their district at the conclusion of the professional development program, and many participants cited that they had shifted from a traditional

teacher-centered classroom to a more student-centered environment. As a result of this long-term study, the researcher developed a blended professional learning planning guide, along with a blended professional learning checklist. The researcher recommends that educational leaders utilize these two documents when they seek to design effective, researched-based professional development for educators using a blended/hybrid model. Further research is needed to continue to discover the impact of professional development delivered in a blended model.

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Chapter One: Introduction

Introduction

Meaningful, relevant and high-quality learning experiences are critical for not only students, but also adult learners. “Professional development is a strategy schools and school districts use to ensure that educators continue to strengthen their practice throughout their career” (Mizel, 2010, p. 1). Educational research on effective professional development revealed that effective, high-quality professional learning opportunities included characteristics that were supportive, reflective, job-embedded, instructionally focused, collaborative, and ongoing (Crawford, 2011; Darling-Hammond, 1998; Darling-Hammond, Hyler, & Gardner, 2017; Desimone, 2009; Hunzicker, 2010; Timperley & Alton-Lee, 2008; Van den Bergh, Ros, & Beijaard, 2014; Yoon, Duncan, Lee, Scarloss, & Shapley, 2007).

According to Pierce (2017), the norm in education was to offer traditional face-to-face, one-day professional development sessions, which research has proved ineffective. There is substantial evidence documenting the characteristics of high-quality professional development, yet limited research available studying innovative and alternative approaches that incorporated the professional development characteristics that have been proven to be effective and shifted professional practices. This study intended to address the lack of the research available to educators studying an innovative professional learning approach utilizing the power of digital tools, while incorporating the many characteristics of traditional professional development that the research cited above has proven effective.

Rationale of the Study

Blended professional development is a relatively untested area and there is little evidence to show that it yields changes in instructional practice over a sustained amount of time. Powell et al. (2015) described blended learning as an instructional shift being utilized by many educational institutions throughout the world that combines both online and face-to-face delivery. Means, Toyama, Murphy, Bakia, and Jones (2010) stated that online learning was one of the most rapidly growing trends in the educational uses of technology for students and teachers. Furthermore, Patrick (2009) recommended that school districts be creative and find ways to provide ongoing professional learning opportunities for educators that foster classroom application. In this study, the researcher examined the impact of professional development delivered to educators in three school districts across the United States in a blended format using digital tools over a sustained amount of time.

Sparks (2015) stated that there were many methods and models for implementing blended learning practices and there was limited evidence to identify the impact and benefits. However, Means et al. (2010) found that participants in blended learning classes outperformed those in completely face-to-face or online classes. The results were published in a report from the U.S. Department of Education, which included a meta-analysis of blended learning studies from 1996 through 2006. Through this study, the researcher critically analyzed if changes to educators' professional practice occurred as a result of participating in a sustained, collaborative, instructionally focused and supportive blended professional development program. Mizell (2010) wrote a report that was published by Learning Forward, formerly known as the National Staff Development

Council, titled, “Why Professional Development Matters.” This international report stated that “professional development is not effective unless it causes teachers to improve their instruction” (p. 10). In addition, to evaluating the impact of professional development on educators’ professional practice, the researcher analyzed data to identify the characteristics and components of a blended professional development model that educators believed had the greatest impact on their professional practice.

Kulpa (2015) examined the perceptions and confidence levels of four high school instructors teaching in a blended environment utilizing a learning management system with their students. A mixed-methods study was utilized that included data from surveys, interviews, and observations after educators participated in one professional development session that was delivered in a blended format utilizing a learning management system. Results revealed that participants were enthusiastic about using digital tools with their students but felt unprepared teaching and designing lessons for their students in a blended environment. The study revealed the need for additional research analyzing an ongoing, collaborative, differentiated professional development program implemented using a blended/hybrid approach, which also examined how participant instructional practices were impacted over time.

There is a tremendous amount of research available that outlined characteristics of effective professional development, but not specifically facilitated in a blended model. Yoon et al. (2007) conducted a meta-analysis of more than 1,300 studies about professional development for the U.S. Department of Education (p. 8). Results from the meta-analysis revealed that educators who received an average of 49 hours of professional development can raise their students’ achievement by as much as 21

percentile points. Furthermore, research cited from Hunzicker (2010) stated that effective professional development should be job-embedded, collaborative, sustained, supportive, and have an instructional focus. Similar findings from Darling-Hammond (1998) and Goodwin (2014) revealed that effective professional development settings provided participants with opportunities for research and inquiry, application of learning, reflection on teaching practice, collaboration with peers, and opportunities to refine and improve their instruction. The findings from Goodwin (2014) revealed an additional need for small collaborative professional development groups and found that the dynamics of group size had a significant impact on participants' learning.

More recently, Will (2016) stated that about 80% of training offered to educators did not meet the definition of quality professional learning as outlined in the Every Students Succeeds Act (ESSA) (p. 1). The Every Students Succeeds Act (2017) was signed into law in the United States by President Obama, and it replaced the No Child Left Behind Act that was enacted in 2002. The ESSA "redefines the standards for high-quality professional development for teachers and K-12 leaders" (Pierce, 2017, p. 1). A more personalized and sustained approach to professional development was recommended, versus one-day physical unconnected workshops. The act specified that high-quality professional learning should meet six criteria: sustained, collaborative, intensive, job-embedded, data-driven, and classroom-focused (Every Students Succeeds Act, 2017). This study evaluated the impact of professional development that was delivered in an innovative format (blended) using digital tools. The professional development program aimed to meet the requirements outlined by the Every Students Succeeds Act. A learning management system, along with other digital tools, was used to

deliver the online components of the blended professional development program. The blended professional development program included face-to-face, synchronous, and asynchronous sessions over a nine-month period.

Additional research from Gratton (2003) identified the need for professional development to be action research-based and centered entirely on participants and their practice. The cycle of action research included investigation, planning, implementation, and evaluation. Gratton (2003) observed tremendous growth in participants who were provided five or six face-to-face professional development and mentoring sessions over the course of a year with opportunities to apply their learning between sessions. This study was built upon the scholarly research that recognized the need for professional learning opportunities to be action research-based, collaborative, and sustained. Educators participating in this study were empowered and encouraged to apply their new learning in their work setting between professional development sessions. In addition, participants were provided with a supportive, collaborative, and reflective environment during and in between the professional development sessions. Through this study, the researcher investigated the skills, comfort levels, and perceptions of the educators participating in the professional learning program that was delivered through a blended model.

Purpose of Study

The purpose of this study was to investigate educators' skills, comfort levels, and attitudes participating in a blended professional development model at three different school districts across the United States. Specifically, this study examined how professional development delivered through a learning management system, in a blended

model was perceived by educators and if changes in professional practices were reported. In addition, the researcher analyzed data to identify the characteristics and components of a blended professional development model that educators believed had the greatest impact on their professional practice.

Over the course of the nine-month professional development program, participants in this study completed three onsite, three asynchronous, and three synchronous professional development sessions. This study aimed to provide data and guidance to leaders who designed and facilitated professional development to meet the diverse professional learning needs of educators they worked with in the 21st century.

According to a study published by the Bill & Melinda Gates Foundation (2014), a high percentage of teachers in the United States were not satisfied with professional development offerings and believed they are not effective, relevant, or applicable to their professional practice. Examples of traditional methods of professional development opportunities that were typically offered to educators were in-service sessions, district-wide workshops, professional conferences, and tuition reimbursement for postsecondary coursework (Patrick, 2009). These forms of professional development have been delivered in a face-to-face setting. One-day workshops and conferences were the norm in public school districts and have proven to be ineffective (Pierce, 2017). Therefore, this study intended to investigate educators' perceptions of participating in a sustained professional development program in a blended format that took place over the course of a nine-month period.

With diminishing budgets and technology enhancements, educators need to be creative how they design and implement professional learning opportunities to meet the

needs of educators in the 21st century. Weinraub (2016) encouraged district and school leaders to embrace digital learning tools and design online professional learning opportunities for educators that were job-embedded and directly relevant to the day-to-day skills needed to improve in their current positions. This study sought to provide guidance to educational leaders when considering alternative and innovative methods of professional development in the 21st century.

Research Questions

Research Question 1: What are educators' perceptions of professional development facilitated through a blended/hybrid model?

Research Question 2: What characteristics of a blended professional development model do educators deem most important for impacting their instructional practices?

Research Question 3: What changes in teaching practices, if any, do educators report after participating in a blended professional learning program?

Hypotheses

Hypothesis 1: There will be improvement in educators' comfort levels with designing blended learning lessons over the course of a nine-month professional development program.

Hypothesis 2: There will be improvement in educators' comfort levels with implementing blended learning lessons over the course of a nine-month professional development program.

Study Limitations

Steps were taken by the researcher when completing this study to minimize the threats to internal validity. Yin (2014) described limitations as factors that may or will influence a study but are out of the researcher's control. The first limitation of this study was related to subject characteristics. Fraenkel, Wallen, and Hyun (2015) referred to this as "selection bias" and described this "as the selection of people for a study that may result in the individuals (or groups) differing from one another in unintended ways that are related to the variables to be studied" (p. 168). The participants involved in the study were part of a long-term blended learning professional development program in three different school districts. The school districts were responsible for recruiting the participants that were in the professional development program. Selection bias may have been present when selecting the participants based on their comfort levels with technology and experience in education. The researcher observed that participants rated themselves high on the survey at the beginning of the program when asked to self-assess their comfort levels with technology. Participants in this study may have had strong feelings towards technology and high skill levels when integrating technology in their curriculum.

A mortality threat was another limitation present. Fraenkel et al. (2015) described this as losing some of the participants in the study as it progresses. This study was conducted over a nine-month period and participants were asked to complete a survey and questionnaire three times throughout that time period during month 1, 5, and 9. Technology was used by the researcher to try to limit this threat, as well as frequent reminders given to the participants, but some participants failed to complete all of the

online surveys and questionnaires over the nine-month period. At the beginning of the study, the participants were asked to complete the adult consent form and were verbally informed that their participation was voluntary and they may decide to withdraw their consent at any time. In summary, the data collected may have been different if all educators who agreed to participate in the study would have completed all three online surveys and questionnaires.

Instrumentation threat was a third limitation of this study. Data for this study were all collected electronically. An online Google Form was used to collect the survey and questionnaire data and an online video conferencing tool was used to conduct the interviews. Lack of face-to-face interaction during the interviews did not allow the researcher to read the body language of the respondents, which may have caused a misinterpretation of a response. The researcher worked for the organization facilitating the long-term blended professional development program and directly worked with some of the participants in the study, so data collector bias may have been another limitation of this study. The professional relationship the researcher developed with the participants over the nine-month period could have impacted the participant responses. Prior to this study the researcher did not know any of the participants.

Finally, response bias may be a limitation of this study because participants were asked to self-assess their comfort levels designing and implementing lessons using technology. Rosenman, Tennekoon, and Hill (2011) explained that:

> there are many reasons individuals might offer biased estimates of self-assessed behavior, ranging from a misunderstanding of what a proper measurement is to

> social-desirability bias, where the respondent wants to 'look good' in the survey, even if the survey is anonymous. (para. 2)

Similarly, Fraenkel et al. (2015) described the Hawthorne effect as participants altering their behaviors simply because they know they are in a study.

Definition of Terms

Active Learning - engaging "teachers directly in designing and trying out teaching strategies, providing them an opportunity to engage in the same style of learning they are designing for their students" (Darling-Hammond et al., 2017, p. v).

Andragogy – "the art and science of helping adults learn" (Fogarty & Pete, 2004, p. 25).

Asynchronous Learning – "commonly facilitated by media such as e-mail and discussion boards, supports work relations among learners and with teachers, even when participants cannot be online at the same time" (Hrastinski, 2008, p. 51).

Blended Learning –

> a formal education program in which a student learns at least in part through online delivery of content and instruction with some element of student control over time, place, path, and/or pace and at least in part at a supervised brick-and-mortar location away from home. (Staker & Horn, 2012, p. 3)

Effective Professional Development – "structured professional learning that results in changes to teacher knowledge and practices, and improvements in student learning outcomes" (Darling-Hammond et al., 2017, p. 2).

Every Student Succeeds Act – Act that was signed into law in December 2015 by President Obama and provided multiple provisions that will help ensure success for students in public K-12 schools (Every student succeeds act, 2017).

Job-Embedded - "learning takes parts as an integrated part of day-to-day professional practice" (Will, 2016, p. 1).

Learning Forward – formerly called the National Staff Development Council and is "an international association of learning educators committed to one purpose in K-12 education: Every educator engages in effective professional learning every day so every student achieves" (Mizell, 2010, p. 25).

Learning Management System (LMS) –

> An LMS is the infrastructure that delivers and manages instructional content, identifies and assesses individual and organizational learning or training goals, tracks the progress towards meeting those goals, and collects and presents data for supervising the learning process of organization as a whole. (Watson & Watson, 2007, p. 5)

Professional Development - also called professional learning, is defined by the Every Student Succeeds Act as "activities that are sustained (not stand-alone, 1-day, or short-term workshops), intensive, collaborative, job-embedded, data-driven, and classroom focused" (Pierce, 2017, p. 1).

Self-Paced Learning –

> Self-paced learning differs from the traditional teacher-led, whole-class lessons in that it allows students to use materials and resources to customize the way they learn in class. The self-paced method allows students to design their own learning

> experience, not only at their own pace, but according to their own interests and learning styles. The role of the instructor is to provide guidance, feedback on proficiency and tailor the learning environment to students based on their needs. (Stanley, 2018, para. 7)

Synchronous Learning – "commonly supported by media such as videoconferencing and chat, has the potential to support e-learners in the development of learning communities" (Hrastinski, 2008, p. 51).

Summary

At the time of this writing, technologies are advancing faster than ever and it's imperative that educational leaders develop a growth mindset, stay up-to-date and provide purposeful, relevant, and meaningful professional development opportunities for the educators they lead. Embracing digital tools and innovative professional development models is a potential way to do this. The purpose of this study was to investigate educators' skills, comfort levels, and attitudes participating in a blended professional development model and identify if changes in professional practices were reported. In addition, characteristics and components of a blended professional development model that educators believed had the greatest impact on their professional practice were identified.

Chapter One provided an introduction, rationale, and purpose of this study. The research questions and hypotheses were outlined, study limitations and key terms were also included. Chapter Two presents literature current at the time of this writing, research regarding professional development in education, and summarizes characteristics that have been found to shift professional practices. In addition, a review of the literature

available related to blended learning will be summarized. Chapter Three will describe the purpose of the study and the methodology will be outlined. Data collection methods for this mixed-methods study will be explained in detail. Chapter Four will summarize the results of the study. Data collected from the surveys, questionnaires, and interviews will be summarized and organized by the three research questions and two hypotheses. Themes evident from coding the transcriptions of interviews and questionnaires will be summarized. Chapter Five will include the researcher's analysis of the data and summarize connections to the literature presented in Chapter Two. In addition, recommendations for educational leaders designing and facilitating professional development will be included and suggestions for future research will be shared.

Chapter Two: Review of Literature

Chapter Two presents current research regarding the state of educator professional development in the United States. In addition, literature and research addressing the characteristics of effective professional development will be summarized, along with considerations when designing professional learning in the educational environment, at the time of this writing. Furthermore, literature summarizing blended learning will be presented along with the limited research available implementing blended learning practices.

Change is inevitable in education. Educators must continue to learn, grow and stretch their professional practice to meet the needs of digital age learners. Mizel (2010) described professional development as "a strategy schools and school districts use to ensure that educators continue to strengthen their practice" (p. 1). Adult learning theories, such as andragogy, can provide a framework for understanding how adults learn and provide insight into devising better professional development programs for educators.

Andragogy: The Theory of Adult Learning

Understanding characteristics of adult learners is important to be aware of when planning, facilitating, and evaluating professional development. The theoretical framework of Andragogy helps provide evidence and understanding to educational practitioners when working with adult learners. According to Moore and Shemberger (2019), "Andragogy was developed to create educational philosophies that concentrate on the needs of adult students and include their life and career experiences in the learning environment" (p. 36). Andragogy differs from pedagogy, which focuses on the

instruction of children or young learners. Knowles, Holton, and Swanson (2015) stated that andragogy is anchored in six main assumptions:

1. learner's need to know
2. learner's self-concept
3. learner's prior experience
4. learner's readiness to learn
5. learner's orientation to learning
6. adult's motivation to learn (p. 4)

These assumptions apply a solid foundation for planning and working with adult learners (Cochran & Brown, 2016; Knowles et al, 2015; Moore & Shemberger, 2019). Educators who understand and apply these andragogical assumptions will have a better chance of meeting the needs of adult learners in a face-to-face, online, or blended learning environment (Cochran, 2015; Harper & Ross, 2011; Knowles et al., 2015).

Assumption 1: The Learner's Need to Know. Adult learners need to know the why behind their learning and understand why they need to learn something before embarking on the learning journey. Clearly explaining the purpose and learning outcomes help adult learners understand the purpose and value of what they are learning, which can lead to increased motivation (Knowles et al, 2015).

Assumption 2: The Learner's Self-Concept. Cochran and Brown (2016) stated that adult learners "have a self-concept of being responsible for their own decisions, for their own lives" (p. 77). Adult learners like to direct their own path and professional learning, so it's recommended to give adults some control and choice over their learning.

Assumption 3: The Learner's Prior Experience. The third assumption of andragogy is the experience of the adult learner. Fogarty and Pete (2004) explained that:

> As people mature, they are constantly and continually adding to their expanding repertoire of experiences. This phenomenon of an ever-growing reservoir of knowledge provides an increasing resource for learning. . . . Adult learners have a rich and extensive bank of experience to draw from. (p. 27)

Assumption 4: The Learner's Readiness to Learn. Adult learners are eager to learn new things and apply that new learning in their professional practice. Cochran and Brown (2016) recommended gauging readiness to learn in an asynchronous environment by using online discussion boards. They stated, "The answers the student provide can help an instructor get a better understanding of the learners' readiness to learn the course" (p. 79).

Assumption 5: The Learner's Orientation to Learning. Adults like their learning to be meaningful and relevant. Fogarty and Pete (2004) asserted that adults "expect to apply their learning at once, to fulfill a need or to address an issue they have" (p. 27).

Assumption 6: The Learner's Motivation to Learn. The final assumption is that adults are intrinsically motivated to learn. Fogarty and Pete (2004) commented that adult learners are "omnivores who devour everything and anything connected to their goals. . . . Adult learners are learning for a reason, and they push themselves from within." (p. 28). Aragon (2003) suggested that instructors support the intrinsic motivation to learn by creating a learning environment that is engaging and allows learners to be active participants.

The assumptions from the adult learning theory (andragogy) outlined above can be used as a guide to plan and facilitate the professional learning process for adult learners in face-to-face, blended or online learning environments (Cochran & Brown, 2016; Harper & Ross, 2011; Henschke, 2011; Knowles et al., 2015). Cochran and Brown (2016) recognized transforming theory to practice can be challenging. Furthermore, instructors who understand andragogy, along with a willingness to make changes based on the andragogical assumptions can improve the learning experience for adult learners.

Current State of Educator Professional Development

In 2014, the Bill and Melinda Gates Foundation published a report titled "Teachers Know Best: Teachers' Views on Professional Development" and more than 1300 educational stakeholders were involved in this study. The study revealed that a high percentage (around 71%) of teachers in the United States are not satisfied with professional development offerings. Furthermore, teachers believed professional development offerings are not effective, relevant or connected to helping students learn. Methods of professional development that were cited by participants in the study were workshops, professional learning communities, conferences, lesson observation, self-guided PD, coaching and courses. Furthermore, "large majorities of teachers do not believe that professional development is helping them prepare for the changing nature of their jobs, including using technology and digital learning tools" (p. 3). Similarly, others have criticized that traditional forms of professional development are failing to meet the needs of educators (Borko, 2004; Darling-Hammond et al., 2017; Kennedy, 2016). The norm in public school districts is one-day workshops or conferences, which have proven to be ineffective (Pierce, 2017). These kind of professional development opportunities do

not give educators the amount of time they need to apply their learning, collaborate and refine their professional practice.

Another nation-wide survey was conducted in 2016 by Corwin, Learning Forward, and the National Education Association to evaluate the then-current state of professional learning and provide recommendations to educators. More than 6,300 teachers from across the United States were involved in the study. Educators reported that professional development and growth is valued in their schools, but they are not deeply involved in the decisions regarding their professional learning. In addition, it was reported that student achievement data is used to drive professional learning planning, but a variety of data points are not used to assess the effectiveness of the professional learning being provided. Furthermore, teachers reported that they are not provided adequate time during the workday to apply their new skills or follow-up on their professional learning.

In addition to nation-wide surveys assessing the current state of educator professional learning in the United States, there has also been legislation passed in this area. The Every Students Succeeds Act (2017) was signed into law in the United States by President Obama and it replaced the No Child Left Behind Act that was enacted in 2002. The ESSA "redefines the standards for high-quality professional development for teachers and K-12 leaders" (Pierce, 2017, p. 1). The act specified that high-quality professional learning should meet six criteria: sustained, collaborative, intensive, job-embedded, data-driven, and classroom-focused (Every Students Succeeds Act, 2017). A more personalized and sustained approach to professional development is recommended versus one-day physical unconnected workshops. Will (2016) stated that about 80% of

training offered to educators does not meet the definition of quality professional learning as outlined in the Every Students Succeeds Act (ESSA). These findings are consistent with results from the nation-wide surveys.

Standards for Professional Learning

Learning Forward (2017), formerly known as the National Staff Development Council, is an international association of educators focused on helping educators plan, implement, and measure high-quality professional learning. This organization created and published the third iteration of standards for professional learning that outlined characteristics of professional learning that lead to effective teaching practices, supportive leadership, and improved student results. The standards are meant to serve as a guide for educators when planning, facilitating and evaluating professional learning. Learning Forward (2017) outlined seven standards for professional learning, which are:

1) Learning Communities
2) Leadership
3) Resources
4) Data
5) Learning Designs
6) Implementation
7) Outcomes (para. 2)

A summary of each standard is depicted in Figure 1.

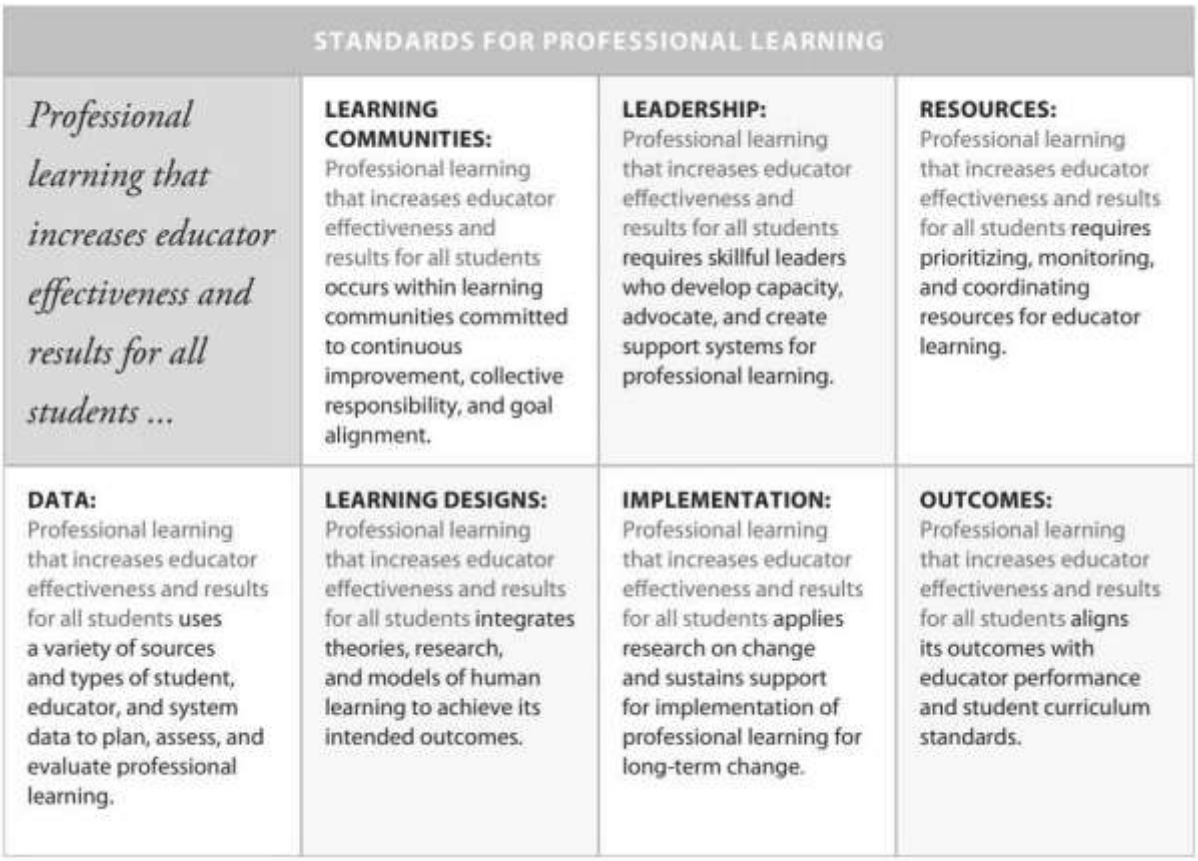

Figure 1. Summary of Standards for Professional Learning (Learning Forward, 2017).

With the third iteration of these standards, Learning Forward (2017) lead a shift in thinking encouraging educators to use the term "professional learning" instead of "professional development. Learning Forward (2017) deduced that the term professional learning places emphasis on adult learning and communicates the importance of educators taking an active role in their learning.

Learning communities. Learning communities is the first standard for professional learning outlined above. This standard recognized the need for professional learning to engage educators in continual collaborative learning communities during the workday to help them stretch their professional practice. Educators in the learning

communities should be accountable to each and support each other to achieve shared goals.

Leadership. This standard stated that leaders should have high expectations and understand that learning is a top priority for students, staff, and themselves. They should advocate for high quality professional learning and work on building their own and others' capacity to learn and lead professional learning. It's also imperative they clearly articulate the link between educator professional learning and increased student achievement. Furthermore, leaders should focus on making sure proper support systems and structures are in place to effectively support professional learning and ongoing continuous improvement. This may include making sure resources are equitably distributed to accomplish goals, actively engaging with policy makers, and aligning internal policies with their school systems to ensure effective professional learning can take place.

Resources. According to Learning Forward (2017), the availability and allocation of resources for professional learning can affect its results and quality. The funding available for professional learning can impact time, staff, materials and technology. It is recommended that leaders have a clear understanding of educators learning needs, be committed to allocating equitable resources, and critically examine priorities and goals to achieve intended results for educators and students.

Data. School, educator, and student improvement is driven by frequent collection and analysis of data. Learning Forward (2017) recommended that multiple sources of data, both quantitative and qualitative, be collected to make informed decisions about professional learning. Examples of data that could be collected, but not limited to, are

self-assessments, portfolios, work samples, observations, and common formative and summative assessments. Using multiple sources of data ensures a comprehensive and balanced analysis of educator, student, and school performance. In addition, this can lead to the effective planning and implementation of high-quality professional learning for educators.

Learning designs. This standard recognized that the development of professional learning can take many forms. Learning may occur in face-to-face, online, or blended/hybrid settings. Different learning designs may include internal or external experts and be facilitated in a team based or whole school setting. Educational theories, research and models should be used as a guide when planning and designing professional learning. Learning Forward (2017) noted that learning designs may include common research-based characteristics such as, active engagement, modeling, feedback, ongoing support, metacognition, application, and formative and summative assessment. Learning designers should consider all stages of the learning process and focus on building knowledge, developing skills, transforming practice, challenging beliefs and attitudes, and inspiring educators to take action.

Implementation. The implementation standard for professional learning specifies that adult learning is a process that happens over time and requires sustained support to ensure the new learning is being put into practice. Learning Forward (2017) recommended that educators have three to five years of continual implementation support. This could include additional professional learning opportunities that deepen understanding and refine educator practice or even coaching and reflection opportunities. Furthermore, it’s recommended that those responsible for professional learning draw

from multiple bodies of research about change to align resources (time, staff materials, and technology) to institute and sustain implementation.

Outcomes. The final standard for professional learning is outcomes. This standard recognized that when the content of professional learning integrates with student curriculum and educator performance standards, then the connection between educator and student learning becomes clear. In turn, this increases the possibility that professional learning may contribute to increased student learning and achievement. Furthermore, Learning Forward (2017) stated that:

> With student learning outcomes as the focus, professional learning deepens educators' content knowledge, pedagogical content knowledge, and understanding of how students learn the specific discipline. Using student learning outcomes as its outcomes, professional learning can model and engage educators in practices they are expected to implement within their classrooms and workplaces. (para. 6)

In summary, the seven standards developed by Learning Forward are designed to guide the learning, facilitation, implementation and evaluation of professional learning for educators. The next section will provide a more detailed review of educational research related to professional development and provide an additional lens of understanding to the development of these standards.

Characteristics of Effective Professional Development

Many scholars have found that teaching quality is an important factor in improving student learning and achievement (Hanushek, 2011; Mizell, 2010; Nye, Konstantopoulos, & Hedges, 2004; Rivkin, Hanushek, & Kain, 2005). Other scholars stated that quality professional development experiences are key to the improvement of

teaching and learning (Darling-Hammond et al., 2017; Kennedy, 2016; Van de Bergh et al., 2014). On the other hand, Darling-Hammond et al. (2017) pointed out that professional development does not always lead to learning and growth. In addition, Fullan (2007) argued that external approaches to professional development or instructional improvement are not always powerful enough to impact change in the classroom or school. Wei, Darling-Hammond, Andree, Richardson, and Orphanos (2009) emphasized that "improving professional learning for educators is a crucial step in transforming schools and improving academic achievement" (p. ii).

There is a vast body of research that is consistent and has revealed effective components of professional development. Darling-Hammond is a thought-leader and scholar in this area who conducted extensive research over the years. In 2017, she identified seven characteristics of effective professional development by reviewing 35 methodologically rigorous studies. The studies revealed a positive link between teacher professional development, teaching practices and student outcomes. The seven characteristics of effective professional development identified were:

1. Is of sustained duration
2. Is content focus
3. Incorporates active learning utilizing adult learning theory
4. Supports collaboration, typically in job-embedded contexts
5. Uses models or modeling of effective practice
6. Provides coaching and expert support
7. Offers opportunities for feedback and reflection (Darling-Hammond et al., 2017, p. 14).

These findings are consistent with current literature from other scholars (Crawford, 2011; Desimone, 2009; Hunzicker, 2010, Timperley & Alton-Lee, 2008; Van den Bergh et al., 2014; Yoon et al., 2007).

Is of sustained duration. Yoon et al. (2007) conducted a meta-analysis of 1,300 studies about professional development for the U.S. Department of Education. Of the 1,300 studies, only nine of them met What Works Clearinghouse standards for research. Results from the nine studies revealed a common theme that educators who received an average of 49 hours of professional development can raise students' achievement by as much as 21 percentile points. Other scholars have reported similar findings sharing that professional development had a positive and significant effect on student achievement when it is ongoing and continual (Allen, Pianta, Gregory, Mikami, & Lun, 2011; Crawford, 2011; Darling-Hammond et al., 2017; Desimone, 2009; Doppelt et al., 2009; Hunziker, 2010; Landry, Swank, Smith, Assel, & Gunnewig, 2006; Van de Bergh et al., 2014). Furthermore, Fogarty and Pete (2004) explained that the process evolves over time and participants "become acquainted with the basic ideas and have time to work with the ideas in authentic and relevant ways with the support of supervisory staff and colleagues" (p. 64). As cited earlier when reviewing the current state of educator professional development, one-day workshops and conferences are the norm in public school districts and have proven to be ineffective (Pierce, 2017).

By the same token, a research study was conducted over the course of three years from a series of four different workshops with unique participants. The professional development workshops were provided in a physical setting and were one-time workshops. Most participants in the workshops evaluated the professional development

as a positive experience and achieving the intended learning outcomes, but only a small number of participants actually put what they learned into practice. A mixed-methods study was conducted with semi-structured interviews that took place three months after to the professional development sessions to determine whether participants had put what they learned into practice (Doherty, 2011).

Is content focused. Intensive, content focused professional development has revealed growth in improving teacher's knowledge and professional practice (Darling-Hammond et. al, 2017; Desimone, 2009; Doppelt et al., 2009; Hunzicker, 2010; Landry et al., 2006; Timperley & Alton-Lee, 2008; Van den Bergh et al., 2014). Most often the professional development is job-embedded and the learning and collaboration take place in the classroom rather than in large PD groups. Additionally, Darling-Hammond et al. (2017) noted that "professional learning that is context specific, job embedded, and content based is particularly important for addressing the diverse needs of students (and thus teachers) in differing settings" (p. 5).

Incorporates active learning utilizing adult learning theory. Active learning is summarized as engaging

> teachers directly in designing and trying out teaching strategies, providing them an opportunity to engage in the same style of learning they are designing for their students. Such PD uses authentic artifacts, interactive activities, and other strategies to provide deeply embedded, highly contextualized professional learning. (Darling-Hammond et al., 2017, p. v)

Scholarly research has revealed the link between active learning and effective professional development (Allen et al., 2011; Darling-Hammond et al., 2017; Doppelt et

al., 2009; Landry et al., 2006; Shaha & Ellsworth, 2014). This kind of learning moves away from traditional teaching models, such as direct instruction, while engaging participants and encouraging them to apply their learning directly to their professional practice. Tate (2009) noted that attention and memory are supported when physical movement is part of the active learning experience. Active learning has been described as an **"**umbrella" that often incorporates various elements, such as collaboration, coaching, modeling, feedback, and reflection (Darling-Hammond et al., 2017). Similarly, Gratton (2003) identified the need for professional development to be action research-based and centered entirely on participants and their practice. The cycle of action research includes investigation, planning, implementation and evaluation.

Related to the theory of adult learning (andragogy), Trotter (2006) identified three themes that should be considered when designing professional development:

1. Adults come to learning with experiences that should be utilized as resources for new learning.
2. Adults should choose their learning opportunities based on interest and their own classroom experience/needs.
3. Reflection and inquiry should be central to learning and development (Darling-Hammond, 2017, p. 7).

These themes provide a general framing between active learning and the six assumptions of andragogy that were presented earlier in this literature review. In summary, professional development that incorporates active leaning can be effective supporting adult professional growth and student learning (Allen et al., 2011; Darling-Hammond et al., 2017; Doppelt et al., 2009; Landry et al., 2006; Shaha & Ellsworth, 2014.)

Supports collaboration, typically in job-embedded contexts. Scholarly research is consistent and revealed that an important element of high-quality professional development offerings is providing participants with opportunities to collaborate (Allen et al., 2011; Darling-Hammond, 1998; Darling-Hammond et al., 2017; Desimone, 2009; Goodwin, 2014; Hunzicker, 2010; Shaha & Ellsworth, 2014; Timperley & Alton-Lee, 2008; Van den Bergh et al., 2014). Darling-Hammond et al. (2017) reported that 32 of the 35 studies evaluated (as cited earlier) incorporated some element of collaboration in the professional development activities. In addition, it was concluded that "when PD utilizes effective collaborative structures for teachers to problem-solve and learn together, it can positively contribute to student achievement" (p. 10). Additionally, research has revealed that educator learning is strengthened when participants openly share their practice and provide and accept feedback from each other. As noted earlier, an assumption of andragogy is that adult learners have a wealth of experience and ever-growing reservoir of knowledge (Knowles et al., 2015). With this extensive experience and knowledge, collaboration opportunities built-into professional learning have the potential to be rich and beneficial for educators. Kulpa (2015, as cited in Duncan-Howell, 2010) stated that when people are given the opportunity to meet on a regular basis, a sense of community is built and thus there is rich collaboration among participants. Furthermore, Goodwin (2014) reported that the dynamics of group size could have a significant impact on participant learning.

Taking this further, Allen et al. (2011) stated that cyber collaboration can be effective in improving student achievement. A study conducted in 2009 by Landry et al. evaluated the impact of professional development facilitated through an online program.

Collaborative components, such as discussion boards, small group activities and video models were included in the professional development experience. Similarly, Shaha and Ellsworth (2014) reported positive findings when teachers participated in an online, on-demand professional development program. Students' math and reading scores in Title 1 schools were significantly higher than students who teachers did not participate in the professional development experience.

Uses models or modeling of effective practice. Professional development that includes modeling of instruction or includes curricular and instructional models has proven to be successful (Allen et al, 2011; Darling-Hammond et al, 2017; Doppelt et al, 2009; Landry et al., 2006). Hubbell and Goodwin (2019) explained that an instructional model can help educators "understand how to design and deliver effective learning opportunities for students" (p. 1). In addition, it "can unite school leaders, teachers, and students with shared goals, and a shared vocabulary for discussing progress" (p. 1). Similarly, Darling-Hammond (2017) believed that "curricular and instructional models and modeling of instruction helps teachers to have a vision of practice on which to anchor their own learning and growth" (p. 11). There are a variety of instructional models used in education today. Some examples are direct instruction, experimental learning, mastery teaching, gradual release of responsibility, and the 5E instructional model (Engage, Explore, Explain, Elaborate, and Evaluate) (Hubbell & Goodwin, 2019). Furthermore, many scholars agree that consistency of instructional quality is what differentiates lower from higher performing schools (Chenoweth, 2009; Hattie, 2011; Jackson & Makarin, 2018).

Darling-Hammond et al. (2017) reported that all 35 educational research studies reviewed incorporated instructional models or modeling of effective instruction. Examples of modeling can include, but are not limited to:

1. Video or written cases of teaching
2. Demonstration of lessons
3. Unit or lesson plans
4. Observations of peers
5. Curriculum materials including samples assessments and student work samples (p. 11)

Doppelt et al. (2009) reported findings from a research study conducted with middle school teachers who were being asked to use a new science curriculum. Two groups of teachers implemented the new curriculum, while one group participated in active learning based on the new curriculum. In other words, the professional development facilitator modeled lessons with the participants like what they were being asked to do with their students. In addition, this group spent time collaborating, sharing student samples and reflecting. The second group of teachers were not given any professional development and were asked to implement the new curriculum. Students whose teachers participated in the professional development had statistically greater achievement than the students whose teachers did not participate in the PD or model lessons. Darling-Hammond et al. (2017) emphasized that it was even more significant that:

> achievement for students of those teachers who continued to use the older standard curriculum was greater than that of those students whose teachers used

> the new curriculum with no PD. That suggests that students were better off if their teachers did not attempt to utilize new curricular materials without effective PD supporting them. (p. 12)

Likewise, Kleickmann et al. (2016) revealed similar findings and found that teachers who had access to curriculum materials, along with active learning opportunities and expert support had students achieving at higher levels than teachers who were provided with curriculum materials alone.

Provides coaching and expert support. Out of the 35 professional development studies reviewed by Darling-Hammond et al. (2017), 30 of those studies contained a coaching component. Scholars agree that expert support or coaching is a critical component of effective professional development and educators who receive it are more likely to practice and apply their new learning versus others who receive PD with no coaching (Allen et al., 2011; Desimone, 2009; Doppelt et al., 2009; Gratton, 2003; Hunzicker, 2010; Landry et al., 2006; Shaha & Ellsworth, 2014; Timperley & Alton-Lee, 2008; Van den Bergh et al., 2014). Gratton (2003) observed tremendous growth in participants who were provided five or six face-to-face professional development and mentoring sessions over the course of a year with opportunities to apply their learning between sessions. Scholars have also reported that coaching can take place virtually using digital tools or in face-to-face settings (Shaha & Ellsworth, 2014). In summary, the impact of a coaching component as part of professional development has been proven to be beneficial.

Offers opportunities for feedback and reflection. The final characteristic of effective professional development outlined by Darling-Hammond et al. (2017) is

feedback and reflection. “Professional development models associated with gains in student learning frequently provide built-in time for teachers to think about, receive input on, and make changes to their practice” (Darling-Hammond et al., 2017, p. 14). Other scholars agree that feedback and reflection are an important component of professional development (Allen et al., 2011; Doppelt et al., 2009; Landry et al., 2006; Shaha & Ellsworth, 2014). In addition, it was noted that feedback can be given using digital tools or in a face-to-face setting. Furthermore, in effective professional development programs “the practices of generating feedback and supporting reflection often include opportunities to share both positive and constructive reactions to authentic instances of teacher practice, such as lesson plans, demonstration lessons, or videos of instruction” (Darling-Hammond et al., 2017, p. 15).

Hunzicker (2010) developed a helpful checklist for educators that addressed most of the seven characteristics of effective professional development that Darling-Hammond (2017) identified. The checklist is displayed in Figure 2.

Hunzicker (2010) believed that this checklist could serve as a guide for developing effective professional development that is meaningful for adult learners and aligned to educational research. The checklist could be used for planning, as an in-progress survey or final evaluation of professional development offerings.

In summary, a tremendous amount of research revealed consistent characteristics of effective professional development. The scholarly research is not sparse in this area. The research revealed that professional development should be ongoing, collaborative, content focused, incorporate active learning and modeling, provide a coaching and support component and offer opportunities for feedback and reflection.

Characteristics of Effective Professional Development: A Checklist			
	Yes	Partly	No
Supportive			
• Does it combine the needs of individuals with school/district goals?			
• Does it engage teachers, paraprofessionals, and administrators?			
• Does it address the learning needs of specific schools, classrooms, grade levels, and/or teachers?			
• Does it accommodate varying teaching assignments, career stages, and teacher responses to educational innovation?			
• Does it accommodate individual learning styles and preferences?			
• Does it integrate teacher input and allow teachers to make choices?			
Job-embedded			
• Does it connect to teachers' daily responsibilities?			
• Does it include follow up activities that require teachers to apply their learning?			
• Does it require teachers to reflect in writing?			
Instructional-focus			
• Does it emphasize improving student learning outcomes?			
• Does it address subject area content *and* how to teach it?			
• Does it help teachers to anticipate student misconceptions?			
• Does it equip teachers with a wide range of instructional strategies?			
Collaborative			
• Does it engage teachers physically, cognitively, and emotionally?			
• Does it engage teachers socially in working together toward common goals?			
• Does it require teachers to give and receive peer feedback?			
Ongoing			
• Does it require a high number of contact hours over several months' time?			
• Does it provide teachers with many opportunities over time to interact with ideas and procedures or practice new skills?			
• Does it "build" on or relate to other professional development experiences in which teachers are required to engage?			

Figure 2. Checklist: Characteristics of effective professional development (Hunzicker, 2010, p. 13).

As noted in Chapter One, there is limited educational research showing the impact of professional development delivered in a blended learning model. The next section of this chapter will review the current literature related to blended learning.

Models and Definition of Blended Learning

The terms hybrid and blended learning are used interchangeably throughout current literature. Defined at the most basic level, blended learning involves integrating a combination of face-to-face and online instruction (Graham, 2006, 2013). Susan Patrick, the President and Chief Executive Officer for the International Association for K-12 Online Learning, stressed that it's important to realize that "blended learning is not only a combination of online and face-to-face learning, but that students have some control over time, place, path, and pace" (Sparks, 2015, p. 2).

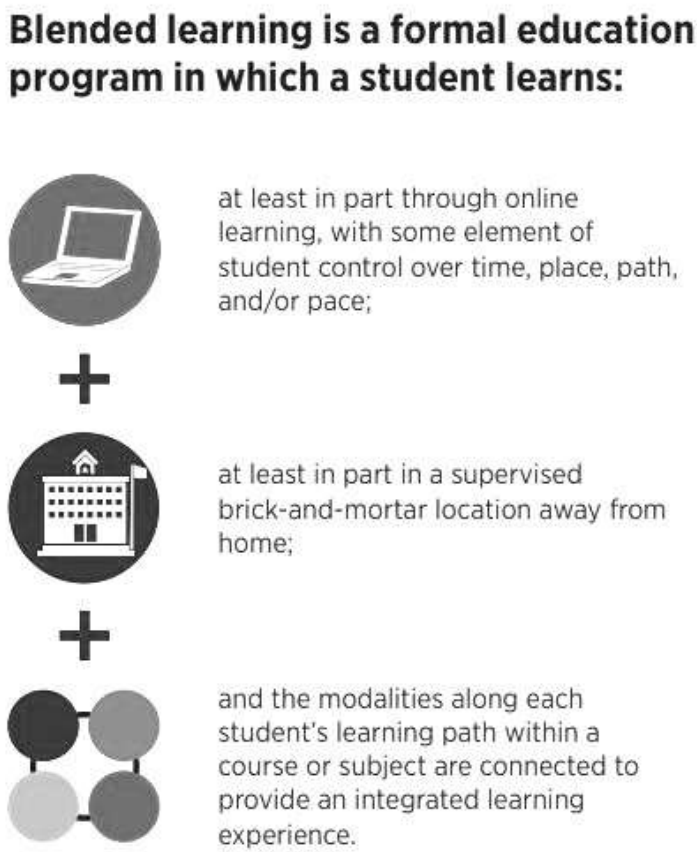

Figure 3. Christensen et al. (2013) definition of blended learning. Copyright by the Christensen Institute. Reprinted with permission.

Similarly, Christensen, Horn, and Staker (2013) described blended learning as:

> when a course takes place partly online and partly through other modalities such as small-group instruction, tutoring, and so forth, the modalities are usually connected. Students pick up where they individually left off when they switch from one modality to another. (p. 7)

Furthermore, their definition of blended learning is depicted through Figure 3. Other scholars are more detailed in their definition of blended learning and stated that blended courses must have between 30-79% of the course content delivered online (Allen, Seaman, & Garrett, 2007).

The Clayton Christensen Institute has outlined four different types of K-12 blended models based on hundreds of school observations (Clayton Christensen Institute, 2019; Horn & Staker, 2014; Staker & Horn, 2012).

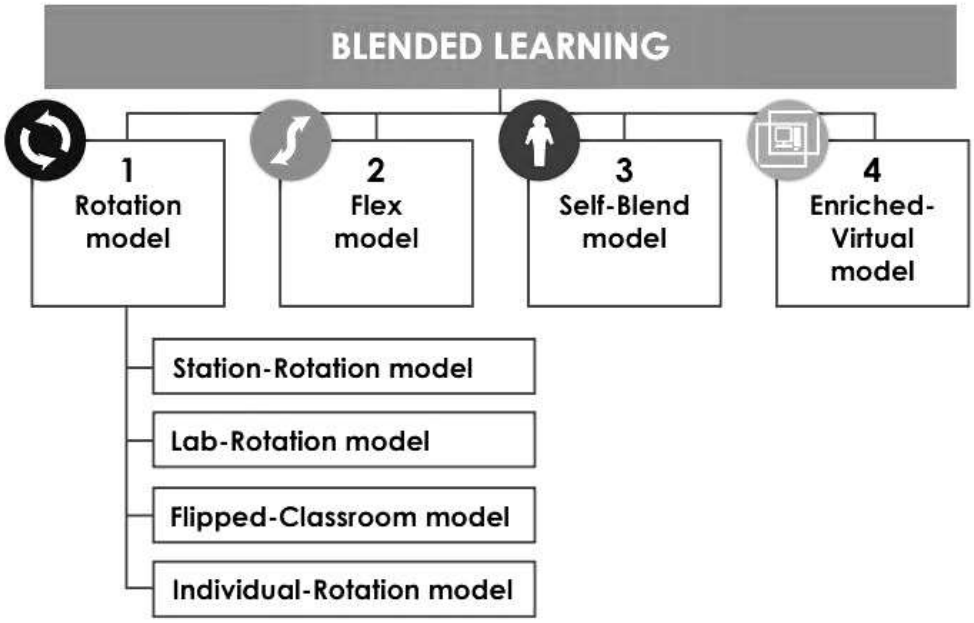

Figure 4. Blended learning models (Staker & Horn, 2012). Copyright by the Christensen Institute. Reprinted with permission.

The four blended learning models are: (1) rotation, (2) flex, (3) self-blend, and (4) enriched virtual. The rotation model is broken down into four sub-models, which are: (1) station-rotation, (2) lab-rotation, (3) flipped-classroom, and (4) individual-rotation. The blended learning models and sub-models are depicted in Figure 4. In addition, a detailed description of each model and sub-model is included in Appendix A.

Blended Learning Research

The current research on implementing blended learning practices is very limited. Scholars stated that research has not kept pace with the adoption and implementation of digital learning in schools (Barbour, 2013; Darrow, Friend, & Powell, 2013; Graham, Borup, Pulham, & Larsen, 2019). There are many different methods and models for implementing blended learning and there is limited evidence to identify the impact and benefits (Sparks, 2015). In a report published from the U.S. Department of education in 2010, it was stated that "online learning – for students and for teachers – is one of the fastest growing trends in educational uses of technology" (p. xi). Similar findings from the National Center for Education Statistics (Zandberg & Lewis, 2008) reported that the number of K-12 students enrolled in a distance education course grew by 65% over a two-year period from 2002-2003 to 2004-2005.

Means et al. (2010) conducted a meta-analysis with the goal of providing research-based guidance on implementing online learning programs in both the K-12 school environment and teacher education programs. Results from the meta-analysis revealed that students who took completely online courses performed modestly better than those students in traditional face-to-face classes. In addition, students who took blended courses, with more that 25% of the content delivered online, performed better (a

third of standard deviation) than the students in face-to-face courses. Although these findings suggested that students in a blended course have an advantage over students in a traditional face-to-face course, the researchers stated that the findings:

> do not demonstrate that online learning is superior as a *medium*…It was the *combination* of elements in the treatment conditions (which was likely to have included additional learning time and materials as well as additional opportunities for collaboration) that produced the observed learning advantages. (p. xviii)

In other words, the research suggested that online learning can be advantageous of traditional face-to-face instruction if the instructor creates a learning environment that is collaborative and supportive.

A doctoral study conducted by Kulpa (2015) examined the perceptions and confidence levels of four high school instructors teaching in a blended environment utilizing a learning management system with their students. A mixed-methods study was utilized that included data from surveys, interviews and observations after educators participated in one professional development session that was delivered in a blended format utilizing a learning management system. Duncan-Howell (2010, as cited in Kulpa, 2015) stated that online interactions are most successful when they serve as extensions of face-to-face sessions or meetings. Results from the study revealed that participants were enthusiastic about using digital tools with their students but felt unprepared teaching and designing lessons for their students in a blended environment.

Mekhitarian (2016) reported results from a research study conducted over the course of three-years, which included three public school sites in California. The study was conducted to "better understand the skills and training required to implement blended

learning effectively" (para. 2) and data were collected using a survey, interviews and observations. Findings from the study revealed that 90% of the participants felt additional skills are needed by educators beyond the traditional classroom model to effectively implement blended learning. Conversely, 80% of the participants believed that the same best practices used in a traditional classroom apply to a blended learning classroom. Four recommendations were shared that educational leaders should consider when incorporating blended instructional practices in their professional development. First, it was suggested that blended learning be modeled with teachers so they can experience it as a learner. Second, supporting and encouraging peer observations in blended learning classrooms was recommended. Third, it was recommended that technology training be offered on educational software utilization. It was noted that this would help with effective planning, smooth lesson transitions and minimize student frustration. Furthermore, it was emphasized:

> Although, technological fluency is critical for success, any training on technology should be grounded in instructional practice with clear connections to how technology can enhance and inform student learning opportunities. Technology integration should be woven into professional development on instructional practice instead of becoming the focal point. (para. 6)

The final recommendation that educational leaders should consider when incorporating blended instructional practices into professional development included providing support and instruction for classroom management strategies in a digital classroom. It was stated that "In addition to establishing traditional classroom expectations, educators must consider the impact of digital citizenship as well as logistical considerations regarding

software access and hardware management" (Mekhitarian, 2016, para. 7). Many of these findings and recommendations were consistent with the review of literature. Information was previously presented that outlined effective characteristics of professional development. Similarly, Darling-Hammond et al. (2017) stated that professional development should incorporate instructional models or modeling of effective practice, provide expert support, and incorporate active learning components.

Need for Updated Professional Development Opportunities for Educators

With today's technology, educational leaders have the power to embrace digital tools and rethink the professional development offerings they are designing and facilitating. Sheninger (2014) and Wienraub (2016) urged educational leaders to embrace online digital tools and use them to design online professional learning opportunities. Horsley (2010) believed that instructors should change the way they educate adults because of the impact and influence of technology. Likewise, Mekhitarian (2016) stated that "with the growing prevalence of blended learning in classrooms across the country, the need for teacher training for effective implementation is more critical than ever" (para. 1). It is recommended that educational leaders identify face-to-face professional learning initiatives and transform them into powerful blended learning experiences that are job-embedded and directly relevant to the day-to-day skills needed to improve current professional practice (Patrick, 2009; Wienraub, 2016). Furthermore, Wienraub (2016) stated that "digital learning for teachers will only work, and can only be evaluated successfully, when digital elements like courses, modules, professional learning communities, and social networks are brought to the table as valid parts of a professional learning system and not merely add-ons" (p. 1). Other scholars concluded that online

learning experiences can be improved by providing content that is consistent with each student's learning style and recommended that students be exposed to a variety of learning experiences to help them become a more versatile online learner (Zapalska & Brozik, 2006).

Crawford (2011) urged school leaders to leverage the power of online learning programs to effectively scale professional development. In addition, Parks, Oliver and Carson (2016) recommended that professional development offerings model best practice in instruction and incorporate digital learning tools. They suggested that "both formal and informal professional development should model blended instructional practices and techniques that focus on enhancing learning and measure for efficacy to successfully impact and transform blended instruction and behaviors in the classroom with fidelity" (p. 79). Similarly, Darling-Hammond et al. (2017) stated that there is a need for professional development opportunities for teachers to "learn and refine the pedagogies required to teach" skills such as 21st century competencies, critical thinking, self-direction problem-solving, effective communication and collaboration, and deep mastery of challenging content (p. 11).

Graham et al. (2019) deduced that the growth of blended learning raises the need for educators who have the skills necessary to teach in blended contexts. In addition, "effective blended teaching requires teachers to have both online and traditional teaching skillsets, as well as the ability to seamlessly and strategically integrate the two" (p. 239). Similarly, other researchers have deduced that effective teaching requires updated skills beyond those required in a traditional classroom (Archambault, Debruler, & Freidhoff, 2014; Kennedy & Archambault, 2012). Graham et al. (2019) argued that there is a

significant need to increase the efforts to prepare teachers to meet the increased demand of online and blended learning options for students.

Summary

The purpose of this literature review was first to identify the current state of professional development in the United States. Next, theoretical assumptions outlining how adults learn (andragogy) were presented along with a detailed review of the current literature explaining characteristics of professional development that have proven to be successful. An overview of blended learning was provided along with the current and limited research that is available in this area. Finally, scholarly recommendations for educational leaders were presented when planning and implementing professional development today.

Chapter Three will describe the overall design of the study and procedures used during the research process. Chapter Four summarizes the findings from the research study, which include both quantitative and qualitative data. Finally, Chapter Five includes a discussion of the research findings, implications, and recommendations for future research.

Chapter Three: Research Method and Design

Purpose

The purpose of this study was to investigate educators' skills, comfort levels, and perceptions while participating in a blended professional development model and identify if any changes in professional practices were evident. In addition, characteristics and components of a blended professional development model that educators believed had the greatest impact on their professional practice were identified. As stated by Fraenkel et al. (2015), an advantage of using a mixed-methods study was that researchers can gather and analyze more and different kinds of data compared to just using one approach. Creswell and Plano Clark (2011) reported similar findings regarding mixed methods studies by stating that they enabled the researcher to use both quantitative and qualitative data in one study in order to produce various types of results, so analysis can further the understanding. The quantitative aspect of this study included data collected from surveys that enabled the researcher to analyze if there was improvement in educators' comfort levels both designing and implementing blended learning lessons after they had the opportunity to participate in a sustained and blended professional development model themselves as a learner. The qualitative aspect of this study consisted of data collected from questionnaires and surveys, which produced feedback from educators helping the researcher identify characteristics of a blended professional development model that educators deemed most important for impacting their professional practices. In addition, the qualitative data allowed the researcher to critically analyze and make connections between specific examples educators in the study reported impacting their professional practices.

By completing quantitative and qualitative analysis, the researcher hoped to accomplish the following: provide feedback to educational leaders regarding the effectiveness and changes in teaching practices of the professional development offered in a blended environment utilizing a learning management system; identify characteristics of a blended professional development model that educators deemed most important to impacting their instructional practice; investigate the skills and comfort levels of the participants using technology and a learning management system; and investigate the comfort levels of participants designing technology-rich lessons for their students or audience they directly work with.

Research Questions and Null Hypotheses

The researcher developed three research questions and two null hypotheses statements for analysis, each aligned with the purpose of the study.

Research Question 1: What are educators' perceptions of professional development facilitated through a blended/hybrid model?

Research Question 2: What characteristics of a blended professional development model do educators deem most important for impacting their instructional practices?

Research Question 3: What changes in teaching practices, if any, do educators report after participating in a blended professional learning program?

Null Hypothesis 1: There will be no improvement in educators' comfort levels with designing blended learning lessons over the course of the nine-month professional development program.

Null Hypothesis 2: There will be no improvement in educators' comfort levels with implementing blended learning lessons over the course of the nine-month professional development program.

Data Samples

Participants recruited for this study were implementing the same nine-month blended professional development program during the 2017-2018 school year. There were educators from three school districts involved in this study from three different states in the United States. The school districts participating in this study were from the Midwest and West coast. Two of the districts participating in the study were public school districts and one was a private school district. A nonrandom sampling was utilized by leaders in the participating school districts to determine which educators were involved in the nine-month blended professional development program. Voluntary sampling was the technique utilized by the researcher to identify members of the sample group for this research study. At the beginning of the research study, 46 out of 60 educators from the three participating school districts voluntarily agreed to participate by completing the Adult Consent Form (see Appendix B). In addition, participants were verbally informed by the researcher that their participation was voluntary and that they may choose to withdraw their consent at any time. Fraenkel et al. (2015) recommended that qualitative studies involve between one and 20 participants, but since the same participants were used for the collection of quantitative data, a minimum of 30 was recommended (pp. 103-104). At the conclusion of the nine-month study, the researcher used a final sample size of 25 for analysis of the quantitative data and a sample size of 38 for the qualitative analysis. The survey and questionnaire completed during the first

month of the study contained responses from 38 participants, the fifth month contained 33 responses, and the ninth month contained 38. The researcher explains later in this chapter that a dependent sample *t*-test was used for the quantitative analysis in this study. For this reason, a final sample size of 25 was used for analysis of the quantitative data in this study.

The data in Table 1 display the demographic characteristics from the sample used for the quantitative analysis in this study. Almost three fourths of the participants, or 72% (18/25), were female educators compared to male educators that made up 28% (7/25) of the total sample. The age range of participants in this study was evenly distributed with about 52% of the sample between the ages of 21 and 40 years old and 48% between 41and 60. Participants that have been in education for under ten years accounted for 40% (10) of the sample in the quantitative portion of this study. In addition, 48% (12) of participants had been in education for 11 to 20 years and 12% (3) had been in education for over 20 years. Educators that worked at the secondary level (middle or high school) predominantly represented the positions/roles of participants in the sample with 88% (22). One district-level educator was included, which accounted for 4% of the total sample, and two elementary educators represented 8%.

Table 1

Demographic Characteristics of Survey Participants

	Participants (n=25)	% of Total
Gender		
Male	7	28%
Female	18	72%
Age Range		
21-30	4	16%
31-40	9	36%
41-50	7	28%
51-60	5	20%
Years in Education		
0-5	7	28%
6-10	3	12%
11-15	6	24%
16-20	6	24%
21-25	1	4%
26-30	2	8%
Position in Education		
Elementary Teacher	2	8%
Middle School Teacher	6	24%
High School Teacher	16	64%
District-Level	1	4%

Procedure

To begin the planning process of this study, the researcher developed a detailed research plan and acquired approval from her dissertation chair, Director of Graduate Studies, the Institutional Review Board (IRB), and the three participating school districts.

Educators in the school districts participating in the long-term blended professional development program were solicited to participate in the study through either a face-to-face setting or virtual web conference with the researcher. The researcher used a web conferencing tool, called RingCentral, to virtually connect with participants in two of the districts and met in a face-to-face setting with participants in the third school district. Educators who agreed to participate in the study were asked to complete the Adult Consent Form (see Appendix B). Participants validated consent by accessing the survey and questionnaire links provided.

The study took place over a nine-month period, which included a combination of three onsite, three asynchronous, and three synchronous professional development sessions. The onsite professional development sessions took place in the school districts participating in the study and the virtual sessions took place through a learning management system and web conferencing tool. Overall, the researcher estimated that the professional development program offered 51 hours of learning and collaboration over a nine-month period (See Table 2).

Over the course of the nine-month study, the participants were asked to complete the survey and questionnaire three times during the first, fifth, and ninth month of the professional development program. Participants in the study were provided with support from their districts by being provided with release time to attend the face-to-face facilitated sessions and a stipend to compensate them for their time participating in the asynchronous and synchronous sessions, if they occurred during their non-contracted time.

Table 2

Blended Professional Development Format and Estimated Hours

Professional Development Format	Estimated Hours
Session 1: Face-to-Face Session	8
Session 2: Face-to-Face Session	8
Session 3: Asynchronous Session	4.5
Session 4: Synchronous and Asynchronous Session	4.5
Session 5: Face-to-Face Session	8
Session 6: Asynchronous Session	4.5
Session 7: Synchronous and Asynchronous Session	4.5
Session 8: Asynchronous Session	4.5
Session 9: Face-to-Face Session	8

During the first month of the study, participants were emailed by the researcher (see Appendix C) and asked to complete an online survey and questionnaire that was authored by the researcher (see Appendix D). Hair, Black, Babin, and Anderson (2010) suggested that a five to seven-point Likert scale be used for measurement, if the focus of research was on individuals' behaviors. A five-point Likert scale was used along with open ended questions when the researcher developed the instrument in this study. Scholarly literature suggested that "a five-point scale is readily comprehensible to respondents and enables them to response their views in a better way," versus a seven-point scale (Rahi, 2017, p. 4). The questions developed and used were generated and

expanded on by the researcher from the scholarly research conducted by Kulpa (2015). Kulpa conducted a mixed-methods study examining the perceptions and confidence levels of four high school instructors teaching in a blended environment utilizing a learning management system. According to Fink (1995), "A survey is a system for collecting information to describe, compare, or explain knowledge, attitudes, and practices or behaviors" (p. 1). Similarly, Fowler (2002) explained that researchers design and use surveys to uncover the subjective feelings of the public about a topic. In this study, Google Forms was the digital tool used by the researcher to create and collect the survey and questionnaire data. The survey included 11 statements and the research study participants were asked to self-assess the extent to which they agreed to each of the statements, using a five-point Likert scale. The five levels used on the Likert scale included: Strongly Disagree, Disagree, Neutral, Agree, and Strongly Agree. Before conducting the statistical analysis, the scale was transposed into a numerical scale, represented by: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree. Additional open-ended questions were added to the instrument in order to effectively answer the research questions in this study. As noted in Appendix C, all the questions listed on the survey and questionnaire were not applicable to the participants at the beginning of the study, so an additional column was added to the Likert scale on the survey labeled "N/A." Only the first question on the questionnaire was applicable and administered to participants during the first month of the study. During the fifth month of the professional development program, the researcher made a copy of the survey and questionnaire used during the first month to ensure the data were clearly separated and to make it easier to conduct the analysis at the end of the study. The mid-survey

administered to participants during the fifth month included questions 1 to 4 on the questionnaire and one additional question that helped the researcher identify educators that were willing to participate in the interviews at the conclusion of the professional development program. To increase the number of responses on the survey and questionnaire, the researcher emailed participants two times during the fifth month. In an attempt to meet the minimum sample size of a mixed methods study, the same process was completed by the researcher during the ninth month of the professional development program, and participants were emailed two different times asking them to respond to the online survey and questionnaire.

At the end of the nine-month professional development program semi-structured interviews were completed with ten educators who expressed an interest to participate on the mid-survey and questionnaire (see Appendix D). Salmons (2010) referred to semi-structured interviews as a balance of preplanned questions in a structured approach with the spontaneity and flexibility of an unstructured interview. During the semi-structured interview process, the researcher asked six pre-determined questions (see Appendix E) and then generated follow-up questions for each interviewee during the interview. Educators who expressed an interest in participating in the final interviews were emailed by the researcher during the ninth month of the study to get them scheduled (see Appendix F). Each participant interviewed was given a $10 Starbucks gift card as a token of appreciation for participating in the final interview. Each semi-structured interview lasted approximately 30 to 60 minutes and was conducted virtually by the researcher using a web conferencing tool called RingCentral. This web conferencing tool allowed the researcher and participants to use a web camera to visually see each other during the

interview. The tool also allowed the researcher to easily record each interview and save a digital copy. Once recordings of all the interviews were saved electronically, the researcher utilized an online tool called Rev to transcribe the audio recordings. To ensure accuracy of the data, the researcher reviewed each transcription.

Shank (2006) outlined four common phases of qualitative data analysis: (1) defining the type of analysis to use, (2) classifying the data, (3) making connections among the data, and (4) presenting results. To begin the qualitative analysis in this study, data from the questionnaires and interviews were compiled into one document and responses were organized by similar questions. An open coding process was then used by the researcher and common themes and categories emerged. Once recurring themes were identified, the process of focused coding occurred. Esterberg (2002) stated, "Like open coding, focused coding entails going through your data line by line, but this time you focus on those key themes you identified during open coding" (p. 161). Finally, the researcher generated meaning from the data collected, made connections between the themes, identified patterns that emerged among the themes, and determined further questions that need to be explored.

The researcher, in the original research design, proposed analyzing the quantitative data using a *z*-test for difference of means after collecting data from the Pre-, Mid-, and Post- surveys. At the conclusion of the nine-month study, the researcher consulted with her chair and committee member and determined that a paired-samples *t*-test, also referred to as a two-sample *t*-test of dependent means, would be used instead to analyze the data and determine if there was a statistically significant difference between

the means when participants were assessed during the first and ninth month of the blended/hybrid professional development program.

Ha and Ha (2012) described a dependent or within groups research design as "those in which subjects are randomly selected from a population and serve in more than one condition (such as "before" vs. "after" some treatment) or subjects are matched into pairs and one subject in each pair serves in each condition" (p. 146). They continued to state that research designs were more powerful within groups than between groups. In other words, an advantage of using a two-sample *t*-test for dependent means over a *z*-test for difference of means was that the researcher can eliminate individual differences that occur between participants in a study. This increased the power of the test and researchers were more likely to detect if a statistically significant difference exists. Once data were collected at the end of the nine-month period, the researcher used Excel to easily compile the data from subjects pairing their responses from the first and ninth month in the study. Next, the researcher assigned an identifier for each participant to further protect the privacy of the individuals in the study. Examples of the identifiers used by the researcher were Participant 1 and Participant 2. Once the data were organized, a dependent sample *t*-test was conducted by the researcher to answer the hypotheses in this study using a statistical calculator in Excel (see Appendix G).

In this study, quantitative methodology was used to address the two null hypotheses and first research question. Qualitative methodology was used to address all three research questions. The data elements used from each instrument in this study are outlined in the table below.

Table 3

Data Elements Related to Hypotheses and Research Questions in Study

Hypotheses and Research Questions	Instrument(s)	Question(s)
H1: There will be no improvement in educators' comfort levels with designing blended learning lessons over the course of the nine-month professional development program, measured two times at the beginning and end of the program through use of a survey/questionnaire.	Survey	Q12
H2: There will be no improvement in educators' comfort levels with implementing blended learning lessons over the course of the nine-month professional development program, measured two times at the beginning and end of the program through use of a survey/questionnaire.	Survey	Q13

RQ1: What are educators' perceptions engaged in professional development utilizing a blended learning model?	Survey Questionnaire Interview	Q8 Q1, Q5, Q8 Q1, Q4, Q6
RQ2: What characteristics of a blended professional development model do educators deem most important for impacting their instructional practice?	Questionnaire Interview	Q2, Q3 Q2. Q3
RQ3: What changes in teaching practices, if any, do educators report after participating in a blended professional learning program?	Questionnaire Interview	Q4 Q5

Validity

Different methods were used in an effort to maintain both reliability and validity throughout this study. Fraenkel et al. (2015) stated that an advantage of using a mixed-methods study is that researchers can gather and analyze more and different kinds of data compared to just using one approach. This study included both quantitative and qualitative data collection methods. The validity of this study was enhanced through a triangulation design by collecting data using surveys, questionnaires, and interviews. Fraenkel et al. (2015) described triangulation as "cross-checking of data using multiple data sources or multiple data-collection procedures" (p. G-9). Furthermore, Kaplan and

Duchon (1988) asserted that multiple collection methods increase the robustness of results because the triangulation design strengthens the findings.

Member checking was another process used by the researcher in an effort to determine the validity of this study. Merriam (1998) described the process of member checking as an opportunity for participants (members) to check or approve aspects of the interpretation of the data they provided. When the final interviews were conducted in this study, the researcher asked interviewees to verify the accuracy of some of their responses from the surveys and questionnaires. Follow-up questions were asked by the researcher during the final interviews if further clarification was needed to help clearly understand the viewpoints in the data. This strategy ensured that the researcher accurately translated the participants' viewpoints in the data.

Threat to Validity

Steps were taken by the researcher when completing this study to minimize the threats to internal validity. Yin (2014) described limitations as factors that may or will influence a study but are out of the researcher's control. The first limitation of this study was related to subject characteristics. Fraenkel et al. (2015) referred to this as "selection bias" and described this "as the selection of people for a study that may result in the individuals (or groups) differing from one another in unintended ways that are related to the variables to be studied" (p. 168). The participants involved in the study were part of a long-term blended learning professional development program in three different school districts. The school districts were responsible for recruiting the participants that were in the professional development program. Selection bias may have been present when selecting the participants, based on their comfort levels with technology and experience

in education. The researcher observed that participants rated themselves high on the survey at the beginning of the program when asked to self-assess their comfort levels with technology. Participants in this study may have had strong feelings towards technology and high skill levels when integrating technology in their curriculum at the beginning of this study.

A mortality threat was another limitation present. Fraenkel et al. (2015) described this as losing some of the participants in the study as it progresses. This study was conducted over a nine-month period and participants were asked to complete a survey and questionnaire three times throughout that time period during month 1, 5, and 9. Technology was used by the researcher to attempt to limit this threat, as well as frequent reminders given to the participants, but some participants failed to complete all of the online surveys and questionnaires over the nine-month period. At the beginning of the study, 46 educators completed the adult consent form and agreed to participate in the study. The number of responses to the survey and questionnaires declined as the study continued. The researcher met the minimum sample requirement of 30 each time the survey and questionnaire were distributed, but since the research design was modified to use of paired-samples *t*-tests, a final sample size of 25 was used for analysis of the quantitative data. A final sample size of 38 was used for the qualitative analysis. The final sample size used for the quantitative analysis was determined to be a limitation of this study. In summary, the data collected may have been different if all educators who agreed to participate in the study would have completed all three online surveys and questionnaires.

Instrumentation threat is a third limitation of this study. Data for this study were all collected electronically. An online Google Form was used to collect the survey and questionnaire data and an online video conferencing tool was used to conduct the interviews. Lack of face-to-face interaction during the interviews did not allow the researcher to read the body language of the respondents, which could cause a misinterpretation of a response. The researcher worked for the organization facilitating the long-term blended professional development program and directly worked with some of the participants in the study, so data collector bias may be another limitation of this study. The professional relationship the researcher developed with the participants over the nine-month period could have impacted the participant responses. Prior to this study the researcher did not know any of the participants.

Finally, response bias may be a limitation of this study because participants were asked to self-assess their comfort levels designing and implementing lessons using technology. Rosenman et al. (2011) explained that

> there are many reasons individuals might offer biased estimates of self-assessed behavior, ranging from a misunderstanding of what a proper measurement is to social-desirability bias, where the respondent wants to ‘look good’ in the survey, even if the survey is anonymous. (para. 2)

Similarly, Fraenkel et al. (2015) described the Hawthorne effect as participants altering their behavior, simply because they know they are in a study.

Summary

The intent of this mixed-methods study was to investigate educators’ skills, comfort levels, and attitudes participating in a blended/hybrid professional development

model. The quantitative aspect of this study included data collected from surveys that enabled the researcher to identify if there was improvement in educators' comfort levels both designing and implementing blended learning lessons after they had the opportunity to participate in a sustained and blended professional development model themselves as a learner. The qualitative aspect of this study consisted of data collected from questionnaires and surveys and produced feedback from educators helping the researcher identify characteristics of a blended professional development model that educators deemed most important for impacting their professional practices.

In Chapter Three, the researcher discussed the overall design of the study and procedures used during the research process. Also included were a description of study participants, instruments used, and the data analysis procedures. In addition, a summary of the steps the researcher took in an effort to maintain validity throughout this study were discussed, along with the study limitations. The next chapter summarizes the quantitative and qualitative results analyzed by the researcher. Chapter Five includes a summary of the research findings, implications, and recommendations for future research.

Chapter Four: Analysis

Introduction

Chapter Four includes the results of the mixed-methods study exploring the impact of professional learning in a blended model. The purpose of the study was to investigate educators' skills, comfort levels, and attitudes participating in a blended professional development model and identify if any changes in professional practices were evident. In addition, characteristics and components of a blended professional development model that educators believed had the greatest impact on their professional practice were identified.

The chapter includes the results of both quantitative and qualitative analysis for data collected within the study through surveys, questionnaires, and interviews. The summarized information is organized by the two null hypotheses and three research questions. Emerging themes that appeared after detailed data analysis will be summarized.

Results

Null Hypothesis 1: There will be no improvement in educators' comfort levels with designing blended learning lessons over the course of the nine-month professional development program.

To begin analysis, the researcher ran a dependent sample *t*-test for difference in means to determine if there was improvement in educators' comfort levels when designing blended learning lessons over the course of the nine-month professional development program. The results revealed that educators' comfort levels designing blended learning lessons had improved (M =.52, SD =.82) and were significantly higher

than when they began the professional development program; $t(24) = 3.16$, $p = 0.002$. The null hypothesis was rejected and the researcher concluded that the difference between the two means was statistically significant. In other words, there was significant evidence that showed improvement in the educators' comfort levels designing blended learning lessons after they participated in the nine-month professional development program.

Null Hypothesis 2: There will be no improvement in educators' comfort levels with implementing blended learning lessons over the course of the nine-month professional development program.

The researcher conducted another dependent sample *t*-test to determine if there was improvement in educators' comfort levels implementing blended learning lessons after they participated in the nine-month professional development program. The *t*-test revealed the educators' comfort levels implementing blended learning lessons had improved after participating in nine-months of professional development ($M = 0.44$, $SD = 0.87$); $t(24) = 2.53$, $p = 0.009$. The researcher concluded that the null hypothesis was rejected and the difference between the two means was statistically significant. In summary, there was significant evidence that revealed improvement in the educators' comfort levels implementing blended learning lessons after they participated in the professional development program.

Research Questions:

RQ1: What are educators' perceptions of professional development facilitated through a blended/hybrid model?

Overall, analysis of the data revealed that educators liked participating in a blended/hybrid professional development model over a sustained amount of time. Furthermore, three key themes emerged when analysis of data conducted by the researcher. Those three themes were:

1) Flexibility
2) Variety of Session Formats
3) Lack of Time and Motivation

The researcher used methodological triangulation and analyzed data from all three collection sources (survey, questionnaire, and interviews) used in this study. As stated in Chapter Three, a sample size of 25 was used for analysis of the quantitative data and a sample size of 38 was used for the qualitative analysis.

A dependent sample *t*-test was run on data from Question 8 on the pre- and post-survey (refer to Exhibit A) administered to participants asking if they "enjoy learning in a blended format (combination of face-to-face and online)." Results from the *t*-test revealed that educators' attitudes in learning in a blended format had improved ($M = 0.68$, $SD = 1.44$) and the difference between the two means was statistically significant when compared to after they participated in the nine-month blended professional development program; $t(24) = 2.37$, $p = .013$. Two participants selected the "not applicable" option for this question on the pre-survey. The "not applicable" responses validated comments that were made by the participants through the qualitative collection methods (questionnaire and interview). A handful of participants mentioned that they had never participated in a blended professional development model before and one educator commented, "I have never taken an online class or done anything like that."

Analysis of the qualitative data revealed that many participants in the study preferred the blended model of professional learning over completely online or face-to-face models. When the researcher conducted interviews with ten participants at the conclusion of the nine-month professional development program, eight of the educators stated that they preferred the blended model and would like to be offered future learning opportunities using this method. Responses from the questionnaire revealed that 63.2% (24/38) of participants preferred the blended learning model, compared to 38.8% (14/38), who preferred professional development offered in a completely face-to-face setting.

Flexibility and variety of session formats. Through the questionnaire and video interviews, the researcher asked participants how they felt about the blended format of the professional development they had received over the nine-month period, thinking specifically about the face-to-face, synchronous, and asynchronous sessions they participated in. Analysis of the data revealed flexibility and variety of session formats as two prevalent themes. One participant described the blended professional development model as "the best of both worlds" and continued to speak positively about the flexibility of the model. In addition, the same participant commented:

> The face-to-face interactions with my peers and the instructors make my later online interactions feel more meaningful and include spur of the moment exchange of ideas that might not occur in as much detail online. The variety of learning modalities helps me stay interested and focused.

Another educator stated:

> Learning doesn't always take place in the exact moment that an in-person session is occurring. Sometimes I learn best when ideas have time to marinate, or when I

> have intentionally carved out time to engage new ideas. A blended learning model is the best of both worlds. I love the face-to-face interaction, but also like to spend time reading and studying on my own away from the classroom.

Another educator highlighted the benefits of traveling less and having the ability to refer back to the recorded web sessions by commenting:

> The blended method allows for all participants to get to know one another, to be able to put a personality behind words. The online format then allows for the web sessions to be recorded and played back. It also requires less travel since you can connect from a variety of locations.

Similarly, another educator stated:

> I felt like it was a really flexible format. The idea of having to be out of school for an entire day face-to-face for every one of those sessions would have been very daunting, so it was nice not to have that rigid schedule to where you only could be in a face-to-face meeting. It was very nice to have that flexibility.

Another commented:

> I liked it. If it had been all face-to-face, it would have been too daunting. I would be too much out of the classroom for that or too many times after school for the asynchronous session. It was a good balance.

Similarly, another interviewee commented:

> I think it was a good mix of everything. You didn't just have to leave your classroom and go to professional development multiple times. I'm more of a face-to-face person, but then again, I like to do things on my own time, and learn on my own time, so it was a good balance of both.

One participant even shared an interesting thought about accountability and how they felt with the professional development being implementing in a blended model. They commented "I like the combination. Without the face-to-face time, I think I would be less likely to do the online work. It creates a different type of accountability."

Lack of time and motivation. Several key themes emerged from participants who preferred the completely face-to-face professional development over a blended approach. Participants mentioned their personal learning styles, preferring in-person interaction, lack of internal motivation and insufficient time built into their workday to complete the asynchronous sessions. One educator stated:

> I just don't feel like I put in enough of an effort when you don't actually see the person and get to know the person, and the people along with you. I'm just of the generation that needs to be around people.

Similarly, another commented, "I always like face-to-face better as I like that interaction. I feel like you get more from people that way." Lack of time provided during the workday to complete the asynchronous sessions was a recurring theme that emerged. Table 4 lists more detailed comments shared from educators relating to the theme of lack of time and motivation completing the asynchronous sessions.

Table 4

Educator Comments Pertaining to Lack of Time & Motivation

Like most PD I have been a part of, I like the topics we are digging into, but I have a hard time making progress due to the business of my job getting in the way. I tend to take care of the most urgent matters first, so taking time to grow professionally gets put on the back burner. Therefore, a work-at-your-own-pace model is nice, but it just means I put it off until the last minute, so it really doesn't help me to have a lot of time to investigate the PD.
It's hard to find the time to complete the online work during the school day as I am already working on daily tasks.

It has been difficult to pace myself for the online components. I get easily wrapped up in my day-to-day responsibilities on campus and often leave my blended learning assignments to the last minute. Now I know how my students feel!

The challenge during the online component is intentionally carving out dedicated time to focus on the assignments. In person, I am much more likely to zero in, especially since there is an instructor there to guide the experience. Also, when I am meeting in person, I have set aside time to focus on the activities-at-hand. I am in an environment where others are doing the same. That being said, there have been times where I have set aside undivided time for online learning and have greatly appreciated the ability to move through at a pace that suits my learning. I can be free to explore and can fit the tasks into my schedule. I love the flexibility.

I found myself much more unmotivated to complete the modules when I completed them online, especially in regard to the online discussions. Perhaps part of the reason I like face-to-face is that it is something that is scheduled into my day, and I couldn't be distracted by other chores and things that need to happen as well. At home, I find it hard to keep focused on the PD program when I know I need to do laundry, run to the store, etc.

There is ample data that supported the three themes discussed in this section summarizing educators' perceptions of professional development facilitated in a blended/hybrid model. Educators who participated in the multi-state study perceived the sustained, blended professional development model as beneficial and flexible, while also providing them with opportunities to participate in a variety of different sessions formats. The variety of session formats appealed to the participants' diverse learning needs, but lack of time and motivation appeared to be a factor when participants completed the asynchronous sessions.

Research Question 2: What characteristics of a blended professional development model do educators deem most important for impacting their instructional practices?

Four common themes emerged when the participants in the study where asked what characteristics from the blended professional learning model had the greatest impact on their instructional practices. Those four themes were:

1) Learning at Their Own Pace
2) Active Learning
3) Collaborative Learning Community
4) Immediate Application

Learning at their own pace. This theme was a very prominent characteristic of a blended professional development model that had a significant impact on the participants' professional practice. One participant stated, "I liked collaborating in real time with colleagues during the face-to-face sessions, but I liked working at my own pace during the online modules." Another commented, "I like being able to work at my own pace online, but I value the face-to-face time for questions and building community." Another educator pointed out that they liked working at their own pace because they had choice over their learning by selecting content that was relevant to them. This participant commented, "Blended learning would be my preference because I can, on my own time, concentrate on the stuff I think is relevant during the asynchronous learning, and then get together to collaborate and share results with other professionals during those face-to-face times." Finally, another educator stated, "I liked the blended learning model. I didn't have to depend completely on the facilitators for information, but they did provide accountability and time-management guidelines. The online portions could be done at my own pace. The face-to-face time allowed us to troubleshoot and brainstorm with teachers from my own district and content area."

Active learning. Active learning was another evident characteristic that emerged from the analysis of the qualitative data in this study. One participant commented,

> It was valuable to experience online learning as a student before implementing it as a teacher. Even though some parts of online learning are out of my comfort zone, I can understand why they might work better for some students and their learning styles. I think balancing all of the possibilities for students' needs is important.

Table 5 displays additional comments related to active learning that emerged from educators through the data analysis.

Table 5

Educator Comments Pertaining to Active Learning

Just being exposed to what it is, and being able to experience it myself, kind of let me be able to try some things with my students that I would not have even thought of doing, because we don't have one-to-one Chromebooks and things like that. So, I would have never have probably even known to try that stuff with my students. That was nice being able to experience it myself.
I enjoy all formats of learning and by having the experience myself helps me prepare by students.
I've been able to experience the model as a student, which is extremely valuable. I get to see what it is like to navigate an online learning environment, what works for me, and what doesn't.
I would choose blended because its [sic] modeling what you're learning, which I think is something we need to do more of in professional development. I think it's good that it's blended, because you as a student can realize, oh wow, I'm in a blended classroom. Here's what I'm learning through PD in a blended classroom.
Presenting this program was a great way to model the blended learning experience. I understand what it looks like from the student's perspective, and it allows me to empathize well with the learner.
I loved seeing how I could use the LMS to create a blended learning classroom. As a teacher with multiple levels in the same classroom, this will be a very helpful tool in navigating class time and spending one-on-one time with students.

After participating in the blended professional development program as a learner, another participant highlighted the shifting teacher role in a blended classroom moving from a teacher-centered approach to a more student-centered one. This participant commented:

> It helps to remind me of exactly what my purpose as an instructor is. I see myself as the curator of excellent learning environments (in person and online). I am not the sole dispenser of information, but I want to facilitate, spark discussion, encourage exploration, and help students learn and master new concepts.

Collaborative learning community. The benefits of promoting a collaborative and trusting learning community emerged as an important characteristic of the blended professional development in this study. It was very clear to the researcher through the analysis that promoting an environment where educators can collaborate and get support, in both a face-to-face and online setting, was an impactful element of the blended professional development program. One educator in the study commented:

> I liked the opportunities to collaborate, where everybody even though they were working on their own things and their own subject areas and were doing the asynchronous stuff could work on our own particular things and our particular needs. Then the opportunities to get together and share experiences about how we were using them provided for a range of experiences beyond my own that made me aware of other things I could potentially do. Even those that weren't really well suited to my subject area expanded my way of thinking as far as how the technology can be applied and was useful.

Another educator described the collaborative learning community as “invaluable” and further explained that the powerful opportunities for collaboration, even with educators from various content areas, helped them brainstorm new ways to use the LMS. Other educators mentioned the ease of use posting questions to the facilitator and other cohort members through the LMS discussion boards. One even mentioned that they felt like they received quick and clear feedback and support by posting their questions online. It was very evident that the collaboration opportunities built into the blended learning professional development program was very beneficial. When asked about the most impactful element of the blended PD model, one participant responded by saying, “Being able to speak with other teachers. What I learned from or along with colleagues has been the most valuable lessons.”

Immediate application. The final characteristic that emerged from the blended professional development program that educators deemed significant was the opportunity to immediately apply their learning. This model offered educators the opportunity to revisit the professional learning materials repeatedly over the course of a school year (nine-months) and apply that learning between sessions in the classroom, while receiving feedback and support from the facilitators and other participants. The impact of the immediate application, along with support and feedback received was very clear from this educator’s comment when the researcher asked about the most impactful characteristics of the PD program:

> Being able to attend the face-to-face session, but then being able to go back and to implement things and then have the asynchronous piece of it where you had all kinds of feedback coming from people. And just the ability to try things out after

> we've had a session and be able to contact people and talk to people about what worked or didn't and how I can improve that.

Likewise, another educator stated,

> I think using real-life application. We could go and the next day use what we learned in that PD session, and it was learning something that the district has purchased (LMS), and then going out and actually doing it, and then coming back and sharing and learning more. I mean, it was purposeful in that we're kind of expected to use the online program and so I think that was the most impactful. That we could learn it and then go right and use it.

Analysis of the data from the sustained blended professional learning model critically examined in this research study, distinctly revealed four characteristics that had a significant impact on educators' professional practices. In summary, a collaborative learning community in both an online and physical environment is vital to a blended professional development model. Furthermore, providing active learning opportunities that incorporate modeling of best practice, including components for participants to learn at their own pace were found to be positively significant. Finally, educators reported that when they immediately applied their new learning from the blended professional development program this immensely impacted their instructional practices.

Research Question 3: What changes in teaching practices, if any, do educators report after participating in a blended professional learning program?

Further analysis of the qualitative data revealed numerous participants reporting changes to their professional practices. Two common themes emerged when the data were analyzed. Those two themes were:

1) Shifting to a Student-Centered Classroom
2) Greater Efficiency and Deeper Usage with the Learning Management System

Shifting to a student-centered classroom. Numerous examples were mentioned by participants justifying their shift in instructional practices after participating in the blended professional learning. Specific examples of more student-centered instructional approaches were mentioned, such as implementing different blended learning instructional models like that flipped classroom and station rotation model. An educator in the study commented,

> I was able to flip my math block, which was absolutely phenomenal, and I saw a lot of growth with my kids on their district tests that we give. That was fantastic. Our class had the most growth for the fifth grade. It was a pretty exciting moment for us.

Another educator in the study who stated that they were using this same instructional model commented, “I also have used flipped classroom which has given me more time to have my students to apply the knowledge we have been learning.” Similarly, other educators in the study reported implementing the flipped classroom blended learning model as a way they applied their new learning from the professional development program. Educators reported moving to a more student-centered approach to teaching that allowed them to shift their roles to the facilitator of learning rather than a more instructor-centered approach to teaching, where traditionally the role of the teacher is the gatekeeper of information.

In addition to the flipped classroom blended learning model, the station rotation model was an example cited by numerous educators in the study when questioned about

changes to their instructional practices. Appendix I contains an example from a secondary teacher who shifted to the station rotation model in her classroom. This educator implemented the station rotation model with her students in the classroom over the course of a week. During the instructional time, students participated in both digital and physical learning activities, were empowered to have small group discussions with their peers, participated in a hands-on lab and had the opportunity to work one-on-one with the teacher to get personalized help, if needed.

Additional changes in instructional practice that participants reported were being more thoughtful about how they designed the learning activities for their students in their blended learning classroom. One educator stated, “I'm better at designing and embedding digital learning elements into curriculum. Looking at the SAMR model is really helping me be more purposeful about my design, as well.” The SAMR Model referred to by the participant is a four-level, taxonomy-based approach that can assist educators when critically evaluating how they are integrating technology into the curriculum. As depicted in Figure 5, the four levels in the model are Substitution, Augmentation, Modification, and Redefinition (SAMR).

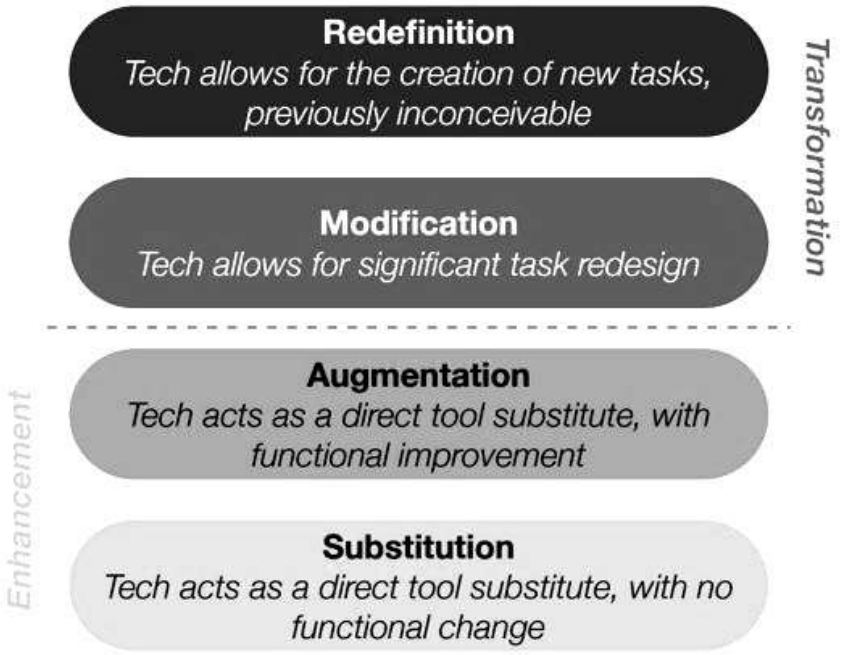

Figure 5. Puentedura's (2006) Substitution, Augmentation, Modification, and Redefinition (SAMR) model.

This model was developed by Puentedura (2006) to help assist educators in planning meaningful digital learning experiences for their students. The goal is to plan lessons that transform learning, which move to the redefinition and modification levels, rather than ones that just enhance the learning experience.

Additional examples of changes to instructional practice cited by multiple participants were the inclusion of global learning activities and student engagement strategies. Instructional strategies, such as the double fishbowl discussion, were mentioned that were facilitated using components in both the physical and online classroom through the learning management system. Through this instructional strategy all students are actively participating or reflecting on the discussion taking place in the physical classroom. Students in the inside circle participate in a lively discussion, while

students in the outside circle are asked to listen and reflect by posting comments and questions through a collaborative area in the learning management system. An educator stated, "I have implemented the double fishbowl discussion (inside circle talks, outside circle posts). I embed and design my page in the LMS to be easy to follow/read, and I use programs/websites suggested in our cohort."

Self-paced learning was another common student-centered approach frequently mentioned by participants in the study. Participants referenced several functions in the learning management system that enabled them to provide this kind of learning experience for their students. One educator commented, "I started using mastery levels with my students so they could choose activities based on their own needs and reading levels." Another educator referred to the built-in functions in the LMS that enabled them to setup and provide automatic feedback to their students as they work at their own pace. This same educator felt it held his students more accountable, as well. Finally, another educator in the study stated,

> My entire approach to teaching has changed! I have re-structured my classes so that I teach new concepts and have students work collaboratively for the first half hour, and then they practice/review via activities in the LMS for the last fifteen minutes. I create all my homework using the test feature, so that it gives immediate feedback to students. I used to give feedback the next class day, but students now see right away what they do and do not understand. Additionally, I allow students to re-take their assignments up to four times. This has increased the motivation in my classes, since students are interested in working on their weaknesses and then trying again.

Greater efficiency and deeper usage with the Learning Management System. Analysis of the qualitative data revealed a second theme when participants in the study were questioned about changes to their professional practices after participating in the blended professional learning program. A deeper level of integration and usage with the learning management was evident to the researcher. Numerous educators reported increased usage of the LMS and enhancements with how they were designing and facilitating the learning experiences for their students in their blended classroom. One educator referred to their online classroom in the LMS as their "one-stop shop for their students." They explained that their students can access resources from their classes in a digital format 24 hours a day and 7 days a week, inside or outside the classroom. Comments from other participants were consistent. Another educator mentioned that they went from hardly using the district LMS to using it for over 50% of the content delivery, while another commented, "I have been able to do my current unit almost 100% online." In addition, other educators reported that they were using the LMS more efficiently and that they gained more confidence building digital lessons for their students. Results from the analysis of the qualitative data were consistent with findings from the quantitative data shared earlier in this chapter. The dependent sample *t*-tests revealed that there was significant evidence that showed improvement in the educators' comfort levels designing and implementing blended learning lessons after they participated in the nine-month professional development program.

Further analysis revealed that participants in the study became familiar with advanced functions in the learning management system that allowed them to create more rigorous and differentiated digital learning activities that helped them meet the needs of

the diverse learners they were working with. An educator commented that the LMS allowed them to "provide a variety of options for the different learning styles and learning levels." Others mentioned that they were able to create and incorporate a variety of resources, such as multimedia components, into their lessons and activities to meet the different learning styles of their students. Finally, another educator in the study stated,

> I'm finding other ways to reach the kids that traditional teaching doesn't work for so much. I want to make sure that they stay engaged. I saw that student engagement was a lot higher because I was able to throw in pieces of the blended learning or able to do part of a lesson through video, through a PowerPoint or through me talking to them on their device.

Many participants also felt that using the digital tools, like the district learning management system, helped with college and career readiness. Some commented that they were "preparing students for the real-world using technology" and "real-life for college."

Changes in instructional practices after educators participated in the blended professional learning program were evident to the researcher from analysis of the data. In summary, significant evidence was reported revealing a shift in educators' instructional approaches moving away from a teacher-centered classroom and moving toward a student-centered one giving the learners more control and responsibility for their own learning. In addition, greater efficiency and deeper usage with the district learning management system was reported at the conclusion of the study after the blended professional development program was completed.

Summary

Chapter Four provided a summary of the results of the study. The purpose of this study was to investigate educators' skills, comfort levels, and attitudes while participating in a blended professional development model over a sustained amount of time. In addition, characteristics and components of a blended professional development model that educators believe had the greatest impact on their professional practice were identified. The results were organized by the three research questions and two hypotheses included in the study. A triangulation research design was used by collecting the data using surveys, questionnaires, and interviews.

Analysis of the quantitative data answering the questions in the two null hypotheses in this study revealed that there was significant evidence that showed improvement in educators' comfort levels designing digital lessons after they participated in the nine-month blended/hybrid professional development program. In addition, significant evidence was present that revealed an increase in educators comfort levels implementing digital lessons at the end of the study.

The three research questions in this study were answered by using data from all three collection sources (surveys, questionnaires, and interviews). The first research question examined educators' perceptions engaged in a blended professional development model. Findings were consistent when analyzing the quantitative data from the dependent sample *t*-test and qualitative data. Both revealed educators' attitudes and perceptions learning in a blended format had positively improved after they participated in professional development facilitated through this model as a learner. At the conclusion of the study, 63.2% (24/38) of participants preferred the blended learning model,

compared to 38.8% (14/38) who preferred a completely face-to-face model. Several reasons were cited by educators in the study who preferred participating in blended professional development model over other traditional models. The positive aspects cited were the flexibility provided by the innovative model, the ability to refer back to recorded sessions and/or content when needed, and the ease of use and ability to easily meet different learning modalities.

The second research question in the study identified four characteristics of the blended professional development model that educators' felt had the greatest impact on their professional practice. Those four characteristics were (1) learning at their own pace, (2) participating in an active learning model that engaged them directly in the new instructional practices they were learning, (3) being part of a collaborative learning community both in a physical and digital environment, and (4) being able to immediately apply their new learning, because the professional development content was relevant and meaningful to them.

Finally, the third research question in this study uncovered what changes in teaching practices, if any, educators reported after participating in a sustained (nine-month) blended professional learning program. Two common themes emerged from the data analysis for this question. First, evidence and specific examples existed from many participants in the study describing how they had shifted from a traditional teacher-centered classroom to a more student-centered environment. Second, analysis of the qualitative data revealed that educators had more knowledge and a deeper level of integration and usage with the learning management system they were using in their district. The same learning management system the educators had available to them to

use in their position was used to facilitate the blended professional development over the course of the nine months. Results revealed that it was impactful that the participants in the study engaged in high-quality blended instruction as a learner.

Chapter Five will revisit the two hypotheses and three research questions in this study. The researcher provides a summary and interpretation of the data provided in Chapter Four. Connections to the literature presented in Chapter Two will be made, along with recommendations for educational leaders designing and facilitating professional development. Finally, suggestions for future research will be shared.

Chapter Five: Discussion

Overview

This chapter summarizes the results of the study, along with making connections to the literature presented in Chapter Two. The researcher triangulated the data, reflected on the findings, and provided recommendations to educational leaders who are responsible for planning, facilitating, and evaluating professional development. In addition, recommendations for future research are included. The purpose of this study was to investigate educators' skills, comfort levels, and attitudes participating in a blended professional development model. Participants in the study were educators from three different school districts, which were all in different states in the United States. Specifically, the researcher sought to:

1. Provide feedback to educational leaders regarding the effectiveness and changes in teaching practices of the professional development offered in a blended environment utilizing a learning management system.
2. Identify characteristics of a blended professional development model that educators deem most important to impacting their instructional practice.
3. Investigate the skills and comfort levels of the participants using technology and a learning management system to design and implement technology rich lessons for their students or audience they directly work with.

First, the researcher identified the participants' comfort levels designing and implementing lessons that integrated technology. This was completed by administering an online survey during the first month of the professional development program. The survey contained a five-point Likert scale and questionnaire component. Next, the

researcher administered another survey and questionnaire at the conclusion of the professional development program. Finally, the researcher conducted semi-structured virtual interviews with ten educators who participated in the study. Several trends emerged from the research data analysis, including similarities between the literature presented in Chapter Two. The research questions and hypotheses for this study were:

Research Questions and Hypotheses

Research Question 1: What are educators' perceptions of professional development facilitated through a blended/hybrid model?

Research Question 2: What characteristics of a blended professional development model do educators deem most important for impacting their instructional practices?

Research Question 3: What changes in teaching practices, if any, do educators report after participating in a blended professional learning program?

Hypothesis 1: There will be improvement in educators' comfort levels with designing blended learning lessons over the course of the nine-month professional development program.

Hypothesis 2: There will be improvement in educators' comfort levels with implementing blended learning lessons over the course of the nine-month professional development program.

Summary of Findings and Connections to Current Literature

Research Question 1. The first research question in this study examined educators' feedback participating in a blended professional development model. The duration of the professional development program was nine-months and it included a

combination of three onsite, three asynchronous, and three synchronous professional development sessions. Utilizing a learning management system during the process, participants were provided with opportunities to collaborate and deepen their learning by selecting a personalized path and were provided virtual support when needed. The researcher triangulated data from the surveys, questionnaires, and interviews to answer this research question.

Results from a *t*-test for difference in means revealed that over half (63.2%) of the participants preferred the blended format over a traditional face-to-face format. In addition, eight out of ten educators who participated in the interviews preferred the blended professional development model. These findings were not surprising to the researcher and connected to the literature previously presented. Many scholars have agreed that traditional forms of professional development were failing to meet the needs of current educators (Borko, 2004; Darling-Hammond et al., 2017; Kennedy, 2016). Two themes emerged from the analysis of the data, which were flexibility and variety of session formats.

Flexibility. Participants described the blended professional development model as the "best of both worlds," stating that the model allowed for meaningful face-to-face interactions and provided opportunities to learn and collaborate in an online format that allowed them to select the time, pace, and path that met their personal learning needs. These findings connected with the learner's self-concept andragogical assumption. Adult learners "have a self-concept of being responsible for their own decisions, for their own lives" (Cochran & Brown, 2016, p. 77). In other words, adult learners like to direct their own path and have choice over their learning. Professional development delivered in a

blended format can be designed to give educators the flexibility to have control over the time, pace, and path of their learning.

Participants noted that they liked not being out of their classrooms away from their students for all the sessions and that the session format gave them the flexibility and opportunity to re-watch the professional development sessions that were delivered in a synchronous format, because they were all recorded and published in the learning management system by the facilitator. The researcher did not find a direct connection between this finding related to flexibility and the review of literature. It is assumed that this is because there has been very little research in the area of blended professional learning. The seven characteristics of effective professional development identified by Darling-Hammond (2017) were based on educational research studies evaluating professional development facilitated in traditional forms and not necessarily in up-to-date innovative approaches.

Variety of session formats. This theme emerged concurrently as the participants described the flexibility of the blended professional learning model. The variety of learning modalities helped educators stay interested and focused. These findings were supported by research from Zapalska and Brozik (2006), which was presented in the review of literature. They reported that online learning experiences can be improved by providing content that is consistent with each student's learning style. In addition, they recommended that students be exposed to a variety of learning experiences to help them become a more versatile online learner.

An interesting finding was revealed when the researcher was critically examining this theme. Some participants noted that the variety of sessions created a learning

environment with a different type of accountability for them. A participant commented, "I like the combination. Without the face-to-face time, I think I would be less likely to do the online work. It creates a different type of accountability."

A handful of reasons were cited from participants who preferred a face-to-face professional learning model over a blended one. The most common theme that emerged was lack of time provided during the workday. This finding was connected to the Resource standard of professional learning presented by Learning Forward (2017). Learning forward stated that the availability and allocation of resources for professional learning can affect its results and quality. Resources for professional learning include time and funding. Lack of time provided during the workday was a recurring theme through the data analysis. A participant commented that "it's hard to find the time to complete the online work during the school day as I am already working on daily tasks" and another stated that "the challenge during the online component is intentionally carving out dedicated time." The researcher believed that if educators were provided more release time during the workday to clearly focus on the online components that would be beneficial for the adult learners.

Additional themes that emerged from participants who preferred a completely face-to-face professional development model over a blended one were preferring face-to-face interaction and lack of internal motivation to complete the asynchronous sessions. These findings were not consistent with the literature (Knowles et al., 2015), which suggested that adult learners are intrinsically motived to learn. Although, this andragogical assumption is based on traditional methods of professional development. As

Aragon (2003) suggested, instructors should support intrinsic motivation to learn by creating an environment that is engaging and allows participants to be active learners.

Research Question 2. The second research question addressed in this study examined characteristics of a blended professional learning model that educators believed impacted their professional practice. Four themes that emerged from the research in this area were: (1) learning at their own pace, (2) participating in an active learning environment, (3) engaging in a collaborative learning community, and (4) being able to immediately apply their new learning.

Learning at their own pace. This theme was consistent with the findings presented from Research Question 1. As stated previously, over half of the educators in the study preferred the blended model because they could control the pace and path of their learning experience. Participants liked having the opportunity to collaborate and work through the content during the asynchronous sessions at their preferred time and pace. These findings were supported by the current literature, which stated that it is important to recognize that "blended learning is not only a combination of online and face-to-face learning, but that students have some control over time, place, path, and pace" (Sparks, 2015, p. 2).

In addition, comments were made that emphasized the opportunity to focus on content that was most relevant. An educator in the study commented, "I can, on my own time, concentrate on the stuff I think is relevant during the asynchronous learning." Furthermore, findings revealed that educators liked being responsible for their learning as one participant commented, "I didn't have to depend completely on the facilitators for information." Overall, this theme was supported by the literature presented in Chapter

Two. As stated earlier in this chapter, an assumption of adult learners is that they "have a self-concept of being responsible for their own decisions" (Cochran & Brown, 2016, p. 77). In other words, adult learners like choice and control over their learning. Another andragogical assumption was learner's orientation to learning. Adult learners want and expect to apply their new learning immediately to their professional practice (Fogarty & Pete, 2004). Educators can immediately put their new learning into practice when the content is meaningful and relevant.

Participating in active learning. Findings from the study revealed that educators believed it was effective that the blended professional development experience incorporated active learning components. Again, the researcher's findings were consistent with the review of literature presented in Chapter Two. Over the years, scholars have reported a positive link between active learning and effective professional development (Allen et al., 2011; Darling-Hammond et al., 2017; Doppelt et al., 2009; Landry et al., 2006; Shaha & Ellsworth, 2014. Review of current literature also reported the significance of modeling of high-quality instruction (Allen et al, 2011; Darling-Hammond et al, 2017; Doppelt et al, 2009; Landry et al., 2006; Learning Forward, 2017). In the ongoing professional development program in this study, participants engaged in blended learning experiences utilizing a learning management system and other digital tools as a learner. The educators were challenged to stretch their thinking and reflect on how the learning experiences could be applied in their classroom or district-level position. A multitude of participant comments were shared in Chapter Four that justified this finding. For example, one participant commented that they would not have tried the updated instructional strategy with their students without experiencing it as a learner.

They commented, “being able to experience it myself, kind of let me be able to try some things with my students that I would not have even thought of doing”.

Engaging in a collaborative learning community. Much of the current literature revealed that an important element of high-quality professional development offerings is providing participants with opportunities to collaborate (Allen et al., 2011; Darling-Hammond, 1998; Darling-Hammond et al., 2017; Desimone, 2009; Goodwin, 2014; Hunzicker, 2010; Learning Forward, 2017; Shaha & Ellsworth, 2014; Timperley & Alton-Lee, 2008; Van den Bergh et al., 2014). In fact, Learning Forward (2017) outlined learning communities as one of its seven standards of professional learning. They stated that “learning communities convene regularly and frequently during the workday to engage in collaborative professional learning to strengthen their practice and increase students results” (para. 2). Furthermore, scholars have reported that collaboration in an online environment can be effective (Allen et al., 2011; Ellsworth, 2014; Landry et al., 2009).

Evidence from this study supported the current literature and found that a characteristic of an effective blended professional learning model was having a collaborative and trusting learning community where participants were also supported. Throughout the nine-month professional learning program the facilitators attempted to build community within each professional development cohort, which promoted a trusting and collaborative community of learners. Both online and physical community building activities and collaborative strategies were used to engage learners in the face-to-face, synchronous and asynchronous sessions.

Through the face-to-face and online collaboration in the blended professional development program in this study, the educators openly reflected and shared how they applied their new learning to their professional practices. The researcher's analysis of the data revealed that opportunities for reflection, support and feedback where provided and were a significant piece of the blended professional development model, which promoted a collaborative learning community. The collaborative components included in the blended professional development model were described as "invaluable" and an educator stated that the opportunities to collaborate "provided for a range of experiences beyond my own that made me aware of other things I could potentially do." This finding supported the research presented in Chapter Two that reported effective characteristics of professional development contained opportunities for reflection, feedback (Allen et al., 2011; Darling-Hammond et al, 2017; Doppelt et al., 2009; Landry et al., 2006; Learning Forward, 2017; Shaha & Ellsworth, 2014, and support (Allen et al., 2011; Darling-Hammond et al, 2017; Desimone, 2009; Doppelt et al., 2009; Gratton, 2003; Hunzicker, 2010; Landry et al., 2006; Learning Forward, 2017; Shaha & Ellsworth, 2014; Timperley & Alton-Lee, 2008; Van den Bergh et al., 2014). Furthermore, the researcher concluded that this finding supported the andragogical assumption that adult learners have a wealth of experience and ever-growing reservoir of knowledge (Knowles et al., 2015), which can provide "a rich and extensive bank of experience to draw from" (Fogarty & Pete, 2004, p. 27) and consequently this can support each other.

Applying their new learning immediately. The fourth theme that emerged from analysis of the data was that a blended professional learning program should offer opportunities for educators to immediately apply their learning. For this to take place, the

PD experience needs to be relevant and meaningful for the participants, so they can apply it to their professional practices. The sustained, blended professional development program in this study allowed participants to revisit the content and materials repeatedly over the course of a school year (nine-months) and apply that learning between sessions in their current positions, while receiving feedback and support from their peers and the facilitator(s). In addition, the researcher concluded from analysis of the data, that providing adult learners with an opportunity to collaborate with peers in both a physical and online environment can be beneficial to implementation. This aligns and builds on the information presented in the previous section about engaging in a collaborative learning community. Educators in the study mentioned the benefits of implementing their new learning and then being provided feedback during the asynchronous sessions, which was utilized by the functionality in the learning management system. A participant commented that it was beneficial "to try things out after we've had a session and then be able to contact people and talk to people about what worked or didn't and how I can improve that."

Findings from the fourth theme identified by the researcher supported the review of literature related to andragogy. Two assumptions of adult learners are the learner's readiness to learn and orientation to learning (Knowles et al., 2015). Adult learners are eager to learn and apply that new learning to their professional practice. In addition, Fogarty and Pete (2004) discerned that the immediate application fulfills a need or addresses an issue they may have.

Fogarty and Pete (2004) asserted that the professional learning process evolves over time as participants "become acquainted with the basic ideas and have time to

work with the ideas in authentic and relevant ways with the support of supervisory staff and colleagues" (p. 64). As stated in Chapter Three, the researcher estimated that the professional development program in this study offered at least 51 hours of learning and collaboration over the duration of the nine-month period. Furthermore, scholars have agreed that a characteristic of effective professional development programs is that they are ongoing and continual (Allen et al., 2011; Crawford, 2011; Darling-Hammond et al., 2017; Desimone, 2009; Doppelt et al., 2009; Hunziker, 2010; Landry et al., 2006; Learning Forward, 2017; Van de Bergh et al., 2014) and research has revealed that student achievement has been positively impacted when PD programs contain a minimum of 49 hours (Yoon et al., 2007).

Research Question 3. The third question in this study, critically examined changes in professional practices, if any, that occurred after educators participated in the ongoing blended professional learning program. Changes in professional practices were reported and two themes were present from the researcher's data analysis. At the conclusion of the blended professional development program educators reported shifts in instructional practices that aligned with a student-centered classroom and increased efficiency and deeper usage with the learning management system.

Characteristics of a student-centered classroom. Shifts in instructional practices moving towards a student-centered classroom were apparent to the researcher after critically analyzing the data from this study. Participants reported characteristics of transitioning to a student-centered classroom which allowed them to shift their role to be the facilitator of learning rather than the gate keeper of information, which is more of an instructor-centered approach. A participant commented about their purpose as an

instructor, by saying “I see myself as the curator of excellent learning environments (in person and online). I’m not the sole dispenser of information, but I want to facilitate, spark discussion, encourage exploration, and help students learn and master new concepts.” Evidence of participants implementing different blended learning models, such as the station rotation and flipped classroom model, were present. In addition, educators in the study asserted that they were more purposeful and thoughtful about how they were designing digital lessons at the conclusion of the blended professional development program. Popular technology integration models used in education today, such as the SAMR Model (Substitution, Augmentation, Modification, and Redefinition) were referenced by participants (Puentedura, 2006). Additional examples of changes to instructional practices that incorporated student-centered strategies included the inclusion of global learning activities and student engagement strategies.

Furthermore, self-paced learning was another student-centered strategy visible from the analysis of data. As previously mentioned in the summary of findings for Research Question 1, evidence of self-paced learning surfaced within the theme of flexibility when participants were asked about their perceptions engaged in a blended professional development model. Self-paced learning also surfaced as a student-centered instructional strategy self-reported by some participants at the conclusion of the study. An interesting connection to this finding related to the literature presented in Chapter 2 is that one of the seven characteristics of effective professional development identified by Darling-Hammond (2017) is modeling best practice and high-quality instruction when facilitating PD with adult learners. This revealed more evidence supporting the

significance of active learning in a blended professional development model, which was discussed in the findings for Research Question 2.

Increased efficiency and deeper usage with learning management system. The second theme that appeared when the researcher sought to answer Research Question 3 involved utilization of the learning management system. A deeper level of integration and usage with the learning management system was evident to the researcher. Evidence not only supported increased usage with the LMS, but also revealed that educators were rethinking how they were designing and facilitating the learning experiences for their students in the blended classrooms. As previously mentioned, educators in the study stated that they were more purposeful and thoughtful about how they were designing digital lessons at the conclusion of the blended professional development program by citing the SAMR Model. In addition, participants stated that they could better meet the diverse learning needs of students by utilizing the functionality in the learning management to differentiate instruction and engage students. A participant stated, "I'm finding other ways to reach the kids that traditional teaching doesn't work for so much." The researcher's analysis of the qualitative data seeking to answer this research question were consistent with findings from the quantitative data in this study. The next section will summarize the results from the quantitative data.

Hypothesis 1. To evaluate educators' comfort levels designing blended learning lessons over the duration of the nine-month professional development program, participants were surveyed at the beginning and end of the program. The results of the analysis using a dependent sample *t*-test for difference in means revealed that educators' comfort levels designing blended learning lessons were significantly higher after they

participated in the ongoing PD program. The researcher believed this finding was supported by the vast body of research that is available that reveals characteristics of effective professional development. Darling-Hammond et al. (2017) identified seven characteristics of effective professional development by reviewing 35 methodologically rigorous studies. Two of the characteristics found to be effective were when professional development programs were of sustained duration and included a collaboration component. The researcher believed this scholarly research supported the finding in hypothesis 1.

***Sustained duration*.** The blended professional development program that educators participated in took place over a nine-month period. As stated in Chapter Three, the researcher estimated that the blended professional development program offered 51 hours of learning and collaboration over that nine-month period. According to Yoon et al. (2007), ongoing professional development programs that contain a minimum of 49 hours have been proven to positively impact student learning. Furthermore, numerous scholarly researchers (Allen et al., 2011; Crawford, 2011; Darling-Hammond et al., 2017; Desimone, 2009; Doppelt et al., 2009; Hunziker, 2010; Landry et al., 2006; Van de Bergh et al., 2014) agreed that professional development that is ongoing can have a positive effect on adult learning. Consequently, the researcher believed the ongoing structure of the blended professional development model had an impact on the improvement of educator's comfort levels designing blended learning lessons because they were able to learn chunks of new information over a sustained amount time while reflecting on their practices and receiving support from the facilitators and their colleagues.

Collaborative learning community. An additional reason the researcher believed educators' comfort levels designing blended learning lessons improved over the course of the professional development program was because of the collaborative learning community that was built and sustained over the nine-month period. As previously mentioned in this chapter in the Research Question 2 section, a common theme that emerged that educators believed had a positive impact on their professional practice was engaging in a collaborative learning community. A vast amount of scholarly research revealed that an important component of effective professional development is providing participants with opportunities to collaborate (Allen et al., 2011; Darling-Hammond, 1998; Darling-Hammond et al., 2017; Desimone, 2009; Goodwin, 2014; Hunzicker, 2010; Learning Forward, 2017; Shaha & Ellsworth, 2014; Timperley & Alton-Lee, 2008; Van den Bergh et al., 2014). From critical analysis of the quantitative and qualitative data, the researcher believed educator's comfort levels designing blended learning lessons had improved because of the collaborative and trusting learning community that was built among each professional development cohort. This belief was supported by many comments from educators in the study. For example, one educator commented that the most impactful element of the blended professional development model was "being able to speak with other teachers" and continued to say that "what I learned from or along with colleagues has been the most valuable lessons."

Hypothesis 2. Evidence supported the researcher's Alternate Hypothesis 2 that there was improvement in educators' comfort levels implementing blended learning lessons over the course of the nine-month professional development program. To investigate this hypothesis educators were asked to self-assess their comfort levels

implementing blended learning lessons at the beginning and end of the blended professional development program through use of a survey/questionnaire. A dependent sample *t*-test was conducted that revealed that educators' comfort levels implementing blended learning lessons were significantly higher after they participated in the ongoing PD program. Similar to what was stated in the Hypothesis 1 section above, the researcher believed this finding was supported by the vast body of research that reveals characteristics of effective professional development. Specifically, Darling-Hammond et al. (2017) found from analysis of 35 scholarly research studies that two characteristics of effective professional development were incorporating modeling of effective practice and offering opportunities for expert support.

Modeling of effective practice. Numerous scholars agreed that professional development that included modeling of effective instructional practices have proven to be successful (Allen et al, 2011; Darling-Hammond et al, 2017; Doppelt et al, 2009; Landry et al., 2006). Furthermore, Darling-Hammond et al. (2017) reported that all 35 educational research studies reviewed incorporated instructional models or modeling of effective instruction. The researcher believed that modeling of effective instruction in a blended learning environment had a direct impact on educators' comfort levels implementing digital lessons from the beginning to the end of the professional development program. Qualitative data collected supported this belief as one educator commented, "I've been able to experience the model as a student, which is extremely valuable." Another educator stated, "Just being exposed to what it is, and being able to experience it myself, kind of let me be able to try some things with my students that I would not have even thought of doing." The researcher believed that the active learning

element of the blended learning model had a connection to the modeling element as well, which consequently improved educator's comfort levels implement blended learning lessons. Darling-Hammond et al. (2017) stated that active learning is an "umbrella" that often incorporates various elements, such as collaboration, coaching, modeling, feedback, and reflection. One final connection to modeling of instructional practice and the literature presented in Chapter Two, was that Parks, Oliver and Carson (2016) recommended that professional development offerings model best practice in instruction and incorporate digital learning tools.

In summary, the researcher believed that incorporating elements of modeling and offering expert support had an impact on educators feeling more comfortable implementing blended learning lessons at the conclusion of the nine-month professional learning program.

Expert support. As previously mentioned, the researcher believed that creating and providing a supportive learning environment had a connection to the improvement in educators' comfort levels implementing blended learning lessons from the beginning to the end of the nine-month professional development program. Participants in the study were provided with support in both a face-to-face and online setting. The blended professional learning model offered educators the opportunity to revisit the professional learning materials repeatedly over the course of a school year (nine-months) and apply that learning between sessions in the classroom, while receiving feedback and support from the facilitators and other participants. Many educators in the study mentioned positive things about the feedback and support coming from the facilitator and other educators throughout the PD program. One educator highlighted that it was beneficial to

"try things out after we've had a session and be able to contact people and talk to people about what worked or didn't and how I can improve that." Several connections can be made to the literature that was presented in Chapter Two. First, two of the standards for professional learning that is recommended by Learning Forward (2017) revealed the need for support during professional development. First, the leadership standard outlined leaders should make sure proper support systems and structures are in place to effectively support professional learning and ongoing continuous improvement. Secondly, the implementation standard for professional learning outlined by Learning Forward specified that adult learning is a process that happens over time and requires sustained support to ensure the new learning is being put into practice. Furthermore, a third connection to the review of literature presented in Chapter Two was from the work for Darling-Hammond et al. (2017). Providing coaching and expert support was one of the seven characteristics of effective professional development. Numerous scholars agreed that expert support or coaching is a critical component of effective professional development and educators who receive it are more likely to practice and apply their new learning versus others who receive PD with no coaching (Allen et al., 2011; Desimone, 2009; Doppelt et al., 2009; Gratton, 2003; Hunzicker, 2010; Landry et al., 2006; Shaha & Ellsworth, 2014; Timperley & Alton-Lee, 2008; Van den Bergh et al., 2014). While there was not a formal coaching component in the blended professional development model examined in this research study, the researcher concluded that an informal coaching and encouraging learning environment was present for the educators in the PD program through using asynchronous communication tools.

Implications

The need to provide effective professional development using innovative ideas and strategies, which also includes modeling of best practices using digital tools is imperative in education today. Professional development provided to educators must be of the highest possible standard and educational leaders must rethink their traditional approaches to professional development because of the growing prevalence and influence of technology in schools today. School districts around the country are making large investments in educational technology and devices and it is imperative for educational leaders to consider how they are approaching the professional development they provide.

The findings in this study revealed implications for educational leaders planning and implementing professional development. Findings not only confirm the significance of the seven characteristics of effective professional development presented in the current review of literature (Darling-Hammond et al., 2017), but also provide evidence that these characteristics should be present when designing non-traditional forms (e.g. blended PD) of professional development for educators. Unexpected findings when reviewing current literature revealed that "students were better off if their teachers did not attempt to utilize new curricular materials without effective PD supporting them" (Darling-Hammond et al, 2017, p. 12). These findings are vital for school leaders to be aware of when designing any kind of professional development, whether traditional or non-traditional, for educators.

Recommendations

Given the lack of research surrounding professional development delivered in a blended learning model for adult learners, further research is highly recommended. A

close look at the limitations in this study are a starting point for recommendations for future researchers.

The first threat to reliability in this study was data collector bias, since the researcher collected data and worked for the organization facilitating the blended professional development program. It is recommended that future researchers do not work closely with the development or facilitation of the professional development program to ensure data collector bias does not exist. Another limitation in this study was selection bias. Even though the researcher had no control over the selection of participants in this study, it is recommended that future researchers attempt to include participants with varying comfort levels using technology. Due to the study being conducted over a nine-month period the response rate from participants slowly declined, which was another limitation in this study known as a mortality threat. The participants were offered a Starbucks gift card at the end of the study if they agreed to participate in the final video interview, but a recommendation for future researchers would be to offer a small token of appreciation, like a gift card, to all participants if they complete both the pre- and post-survey and questionnaire. It is also recommended that future researchers use a two-sample *t*-test for difference in dependent means, because this eliminates individual differences that occur between participants in a study and increases the power of the test, over a *z*-test, so the researcher is more likely to detect if a statistically significant difference exists. The final limitation in this study was response bias. Participants were asked to self-assess their comfort levels designing and implementing lessons using technology and current literature from scholars have noted that individuals might give biased estimates of their self-assessed behavior (Rosenman et al., 2011). It is

recommended that future researchers use multiple sources of data to evaluate the effectiveness of the professional development and growth of the participants, rather than just self-assessments. The recommendations from Guskey can be used as a guide for future researchers when evaluating the impact of the professional development. Guskey discerned that "effective professional learning evaluation requires consideration of five critical stages or levels of information" (Guskey, 2016, p. 32). Those five levels are: (1) participants' reactions, (2) participants' learning, (3) organizational support and change, (4) participants' use of new knowledge and skills, and (5) student learning outcomes.

The methods used in this study in an effort to maintain validity is recommended for future researchers. Both quantitative and qualitative data were used and added to the depth of analysis and internal validity of this study. It is also recommended that future researchers continue to use a triangulation design to increase the robustness of results and strengthen the research findings. In addition, member checking is a valuable process that can be used in future research with participants to check aspects of the interpretation of the data they provided.

Multiple recommendations can be offered from the findings of this research study. First, the researcher used the findings from this study in addition to the scholarly research previously presented about characteristics of effective professional development to create a Blended Professional Learning Checklist. The checklist is displayed in Figure 6 and in Appendix J.

Blended Professional Learning Checklist

This checklist is designed to be used as a tool when designing a blended professional learning model for educators. This checklist is based on characteristics of professional learning that educational research has proven effective in changing teachers' practices and improving student outcomes. Successful professional learning models have included a number of these components simultaneously.

	Yes	Partly	No
Active Learning & Modeling			
1. Engages educators in the same learning activities they are designing or being asked to design for their students.			
2. Models high-quality instructional practices and strategies.			
3. Allows educators to choose some learning opportunities based on their personal learning needs.			
4. Provides self-paced learning opportunities.			
5. Accommodates for different learning modalities.			
Content-Focused			
6. Connects content to participants' context (classroom, community, school, district).			
7. Emphasizes improving student learning outcomes.			
8. Aligns with school, district, and/or state priorities.			
9. Includes the empirical research foundation of the content (key researchers, citations, verbal references to literature) and/or explanation of why the topic is important.			
Collaborative			
10. Fosters relationship/community building.			
11. Provides ample opportunities to collaborate.			
12. Provides opportunities for participants to give and receive peer feedback (both positive and constructive).			
13. Includes opportunities for participants to express personal perspectives (experience or thoughts on a concept).			
Feedback & Reflection			
14. Includes opportunities for participants to reflect on their practice, new learning from the session(s), and/or potential impact on their student's development.			
15. Provides built-in time for participants to think about, receive input on, and make changes to their practice.			
Support & Coaching			
16. Incorporates a coaching model or element.			
17. Provides opportunities for participants to receive support from an expert.			
Sustained Duration			
18. Provides multiple opportunities over time for participants to engage in learning around a concept or practice.			
19. Encourages participants to apply/implement their learning between sessions.			
20. Builds on or relates to participants previous professional learning.			

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Please use this citation to give proper credit for this resource:
Hartman, G. (2019) A mixed-methods study of educators' perceptions and comfort levels of professional learning in a blended model. (Doctoral dissertation, Lindenwood University).

Figure 6. Blended professional learning checklist.

The checklist is designed to be used as a tool by educational leaders when designing a blended/hybrid professional development program. It could also be used as a

growth tool to evaluate current blended professional development programs. The checklist includes six areas: (1) Active Learning and Modeling, (2) Content-Focused, (3) Collaborative, (4) Feedback and Reflection, (5) Support and Coaching, and (6) Sustained Duration. Under each section there are research-based components that should be considered when designing or evaluating a blended professional development program or model.

Second, the researcher created a Blended Professional Learning Planning Guide. The planning guide can be used by educational leaders to help them think through the process of designing a sustained blended professional development model. The planning guide is intended to help educators determine their professional learning outcomes and then determine which PD format would work best (face-to-face, asynchronous, or synchronous). The planning guide is displayed in Figure 7 and in Appendix K.

In summary, further research is needed to continue to discover the impact of professional development delivered in a blended model. We also need to better understand if the current research findings from scholars that reveal effective characteristics of professional development applies to innovative PD methods like blended learning. Future researchers are welcome to use and modify the survey and questionnaire (see Appendix D) or the semi-structured interview script (see Appendix E) that was used in this study. In addition, future researchers are encouraged to use, modify or update the Blended Professional Learning Checklist (see Appendix J) or Blended Professional Learning Planning Guide (see Appendix K) based on their research or needs. Emailing the author at ginaRhartman@gmail.com and asking for permission is requested.

Figure 7. Blended professional learning planning guide.

Personal Reflection

Around the world, blended and online learning is rapidly growing in the K-12 educational environment. As technology evolves, the professional learning provided to educators must also evolve. It is time to rethink the professional development that is being designed and facilitated. I recently had an educational leader in a high school tell me a process had "been this way for 20 years" and this educational leader was not willing to have an open mind and reconsider an antiquated process to better meet the personal

learning needs of a student. I urge educational leaders to keep an open mind, develop a growth mindset and continue to learn and step outside their comfort zone to meet the professional learning needs of not only educators, but also digital-age students. Educational leaders must be willing to embrace digital tools and lead the change they want to see in their schools by modeling innovative and updated instructional practices and just think outside the traditional box when designing and facilitating professional learning for the educators. Furthermore, use data and educational research as a guide to improve and shift your professional practices. As I wrap up this educational journey, I want to leave fellow educators reading my dissertation with one final thought and that is a popular quote from Mahatma Gandhi: “Be the change that you wish to see in the world” (n.d.).

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Appendix A: Description of Blended Learning Models and Sub-Models

The majority of blended-learning programs resemble one of four models: Rotation, Flex, A La Carte, and Enriched Virtual. The Rotation model includes four sub-models: Station Rotation, Lab Rotation, Flipped Classroom, and Individual Rotation.

1) **Rotation model** - a course or subject in which students rotate on a fixed schedule or at the teacher's discretion between learning modalities, at least one of which is online learning. Other modalities might include activities such as small-group or full-class instruction, group projects, individual tutoring, and pencil-and-paper assignments. The students learn mostly on the brick-and-mortar campus, except for any homework assignments.
    a. **Station Rotation -** a course or subject in which students experience the Rotation model within a contained classroom or group of classrooms. The Station Rotation model differs from the Individual Rotation model because students rotate through all of the stations, not only those on their custom schedules.
    b. **Lab Rotation -** a course or subject in which students rotate to a computer lab for the online-learning station.
    c. **Flipped Classroom -** a course or subject in which students participate in online learning off-site in place of traditional homework and then attend the brick-and-mortar school for face-to-face, teacher-guided practice or projects. The primary delivery of content and instruction is online, which

differentiates a Flipped Classroom from students who are merely doing homework practice online at night.

d. **Individual Rotation -** a course or subject in which each student has an individualized playlist and does not necessarily rotate to each available station or modality. An algorithm or teacher(s) sets individual student schedules.

2) **Flex model** - a course or subject in which online learning is the backbone of student learning, even if it directs students to offline activities at times. Students move on an individually customized, fluid schedule among learning modalities. The teacher of record is on-site, and students learn mostly on the brick-and-mortar campus, except for any homework assignments. The teacher of record or other adults provide face-to-face support on a flexible and adaptive as-needed basis through activities such as small-group instruction, group projects, and individual tutoring. Some implementations have substantial face-to-face support, whereas others have minimal support. For example, some Flex models may have face-to-face certified teachers who supplement the online learning on a daily basis, whereas others may provide little face-to-face enrichment. Still others may have different staffing combinations. These variations are useful modifiers to describe a particular Flex model.

3) **A La Carte model** - a course that a student takes entirely online to accompany other experiences that the student is having at a brick-and-mortar school or learning center. The teacher of record for the A La Carte course is the online teacher. Students may take the A La Carte course either on the brick-and-mortar

campus or off-site. This differs from full-time online learning because it is not a whole-school experience. Students take some courses A La Carte and others face-to-face at a brick-and-mortar campus.

4) **Enriched Virtual model** - a course or subject in which students have required face-to-face learning sessions with their teacher of record and then are free to complete their remaining coursework remote from the face-to-face teacher. Online learning is the backbone of student learning when the students are located remotely. The same person generally serves as both the online and face-to-face teacher. Many Enriched Virtual programs began as full-time online schools and then developed blended programs to provide students with brick-and-mortar school experiences. The Enriched Virtual model differs from the Flipped Classroom because in Enriched Virtual programs, students seldom meet face-to-face with their teachers every weekday. It differs from a fully online course because face-to-face learning sessions are more than optional office hours or social events; they are required.

Appendix B: Adult Consent Form

LINDENWOOD

INFORMED CONSENT FOR PARTICIPATION IN RESEARCH ACTIVITIES

"A Mixed Methods Study of Educators Perceptions and Comfort Level of Professional Learning in a Blended Model"

Principal Investigator: Gina Hartman
Telephone: 636-795-6349 E-mail: ghartman@lindenwood.edu

Participant _____ Contact info _____

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1. You are invited to participate in a research study conducted by Gina Hartman, Ed.S. under the guidance of Dr. Robyn Elder at Lindenwood University, which is in St. Charles, Missouri. The purpose of this research is to evaluate the perceptions and impact of educators participating in a sustained, collaborative and job-embedded professional development program that is facilitated in a blended format (combination of face-to-face and online learning components). The principal investigator hopes to provide guidance to educational leaders when considering alternative and innovative methods of professional development in the 21st century.

2. a) Your participation will involve completing three online surveys/questionnaires over the course of the nine-month professional development program. The surveys/questionnaires will be given at the beginning, middle and end of the PD program. You will also be given an optional opportunity to participate in a virtual interview with Gina Hartman at the end of the nine-month professional development program.

   b) The amount of time involved in your participation will be about 10-15 minutes completing each survey/questionnaire. So, the total amount of time over the course of the 9-month period completing the surveys/questionnaires should not exceed 45 minutes. If you decide to participate in the virtual interview at the end of the professional development program this will take about 15-30 minutes. If you participate in the virtual interview you will receive a $10 Starbucks gift card to compensate you for your additional time and feedback provided to the principal investigator at the end of the study.

   Approximately 45 educators from public school districts in the U.S. will be involved in this research study.

3. There are no anticipated risks associated with this research.
4. There are no direct benefits for you participating in this study. However, your participation will contribute to the knowledge of designing and implementing professional learning programs for educators using innovative instructional methods.

5. Your participation is voluntary and you may choose not to participate in this research study or to withdraw your consent at any time. You may choose not to answer any questions that you do not want to answer. You will NOT be penalized in any way should you choose not to participate or to withdraw.

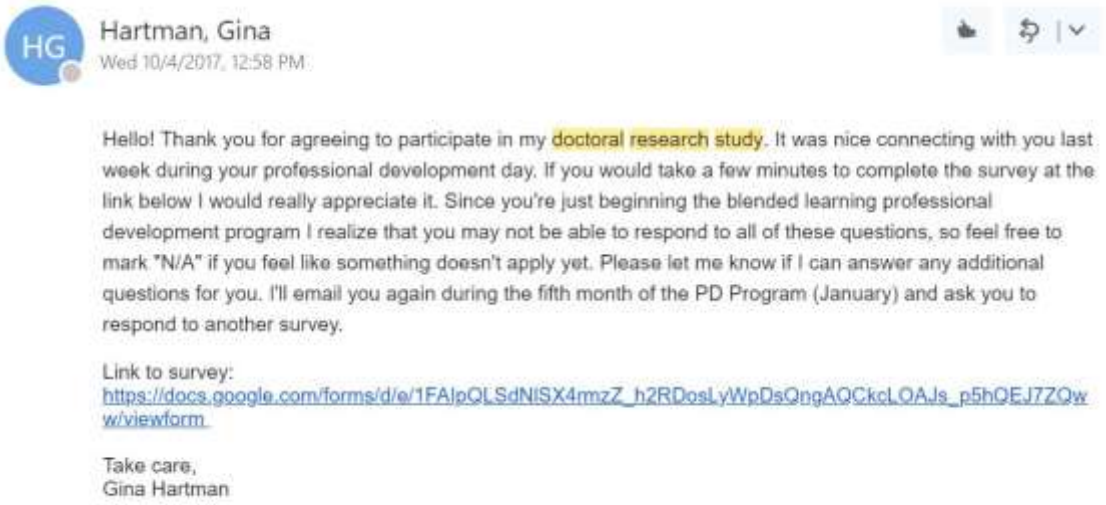
6. We will do everything we can to protect your privacy. As part of this effort, your identity will not be revealed in any publication or presentation that may result from this study and the information collected will remain in the possession of the investigator in a safe location.

7. If you have any questions or concerns regarding this study, or if any problems arise, you may call the Investigator, Gina Hartman (636-795-6349) or the Supervising Faculty, Dr. Robyne Elder (636-949-4332). You may also ask questions of or state concerns regarding your participation to the Lindenwood Institutional Review Board (IRB) through contacting Dr. Marilyn Abbott, Provost at mabbott@lindenwood.edu or 636-949-4912.

I have read this consent form and have been given the opportunity to ask questions. I will also be given a copy of this consent form for my records. I consent to my participation in the research described above.

Participant's Signature	Date	Participant's Printed Name
_____		_____
Signature of Principal Investigator	Date	Investigator Printed Name

Appendix C: Email to Participants in Month 1



HG

Hartman, Gina

Wed 10/4/2017, 12:58 PM

Hello! Thank you for agreeing to participate in my doctoral research study. It was nice connecting with you last week during your professional development day. If you would take a few minutes to complete the survey at the link below I would really appreciate it. Since you're just beginning the blended learning professional development program I realize that you may not be able to respond to all of these questions, so feel free to mark "N/A" if you feel like something doesn't apply yet. Please let me know if I can answer any additional questions for you. I'll email you again during the fifth month of the PD Program (January) and ask you to respond to another survey.

Link to survey:
https://docs.google.com/forms/d/e/1FAIpQLSdNISX4rmzZ_h2RDosLyWpDsQngAQCkcLOAJs_p5hQEJ7ZQw/viewform

Take care,
Gina Hartman

Appendix D: Survey & Questionnaire

Name: _____

1. What is your gender?

- Male
- Female

2. Please indicate your age range?

- 21-30
- 31-40
- 41-50
- 51-60
- 60+

3. How many total years have you taught prior to this school year?

- 0-5 years
- 6-10 years
- 11-15 years
- 16-20 years
- 21-25 years
- 26-30 years
- 30 + years

4. Which option best describes your current position?

- Elementary teacher
- Middle school teacher
- High school teacher district
- Instructional technology leader
- Curriculum leader
- Other: _____

To what extent do you agree with the following statements:	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**	**Not Applicable**
5. I enjoy participating in professional development delivered in a face-to-face format.						
6. I enjoy participating in professional development delivered through a web session (synchronous communication).						

7. I enjoy participating in professional development through online collaboration tools, such as a discussion board, at a time that is convenient for me (asynchronous communication).						
8. I enjoy learning in a blended format (combination of face-to-face and online).						
9. Through this professional development program, I have been provided with opportunities to increase my content knowledge.						

10. Through this professional development program, I have been provided with opportunities to collaborate with other educators.						
11. Participating in a blended professional development model has impacted my teaching and/or professional practice.						
12. I'm comfortable **designing** blended learning lessons utilizing a learning management system (Schoology).						
13. I'm comfortable **implementing** blended						

learning lessons utilizing a learning management system (Schoology).						
14. I'm comfortable teaching a successful blended learning course using a learning management system (Schoology).						
15. I believe blended learning is an effective learning medium.						

Questionnaire:

1. How do you feel about the blended (combination of face-to-face and online) instructional model used to facilitate this professional development program?

2. What characteristics or components of the blended professional development model do you think has had the most significant impact on your learning or instructional practice?

3. What characteristics or components of the blended professional development model do you think has had the least impact on your learning or instructional practice?

4. Have any changes in your instructional practice occurred due to your participation in this blended professional development program? Please give specific examples.

5. How do you feel about the length of the professional development program (too short or long)?

6. In the future, if you had the choice of participating in another long-term professional development program would you prefer a blended, completely face-to-face or completely online format? Please justify your answer.

Note from researcher:

- When this survey was given at the beginning of the study (Month 1 of the PD Program), all the questions did not apply to the participants. An additional column was added to the Likert scale and labeled "N/A".
- Questions 1-4 on the Questionnaire were included on the mid-survey administered to participants.
- Questions 1-6 on the Questionnaire were included on the post-survey administered to participants.
- The mid-survey included one additional question that helped the researcher identify participants to interview at the conclusion of the nine-month professional

development program. This question was: “Would you be interested in participating in a virtual interview with the researcher during the last month of the professional development program? Interviewees will be given a $10 Starbucks gift card as a token of appreciation for participating in the final interview.”

Appendix E: Semi-Structured Interview Script

Thank you for giving me time today in your schedule. I will be using your feedback to help answer my research questions about the impact of professional development delivered in a blended format. Please feel free to speak openly and honestly. I'm going to ask you a series of five prescribed questions. I may follow-up with additional questions if I need clarification about something or if I would like a little more detailed information. With your permission, I will record the interview today so I can transcribe it. Do I have your permission to record this interview? Your identity will remain confidential. Can I answer any additional questions for you before we begin?

1. How do you feel about the blended/hybrid format of the professional development you received during the past 9-months? Think about the face-to-face, synchronous and asynchronous sessions you participated in over the past 9-months.
2. What characteristics or components of the blended professional development model do you think had the most significant impact on your learning or instructional practice?
3. What characteristics or components of the blended professional development model do you think had the least impact on your learning or instructional practice?
4. How do you feel about the length of the professional development program (too short or long)?
5. What specific changes in your instructional practices, if any, occurred due to your participation in the blended professional development program? Feel free to give specific examples.

6. In the future, if you had the choice to participate in another long-term professional development program would you prefer a blended, completely face-to-face or completely online format? Please justify your answer.

Appendix F: Email to Participants Requesting to Schedule Virtual Interview

Hello! I'm emailing you because your Blended Learning PD cohort is coming to an end and I wanted to ask if you would please take the final survey at the link below to give me your feedback for my research study?

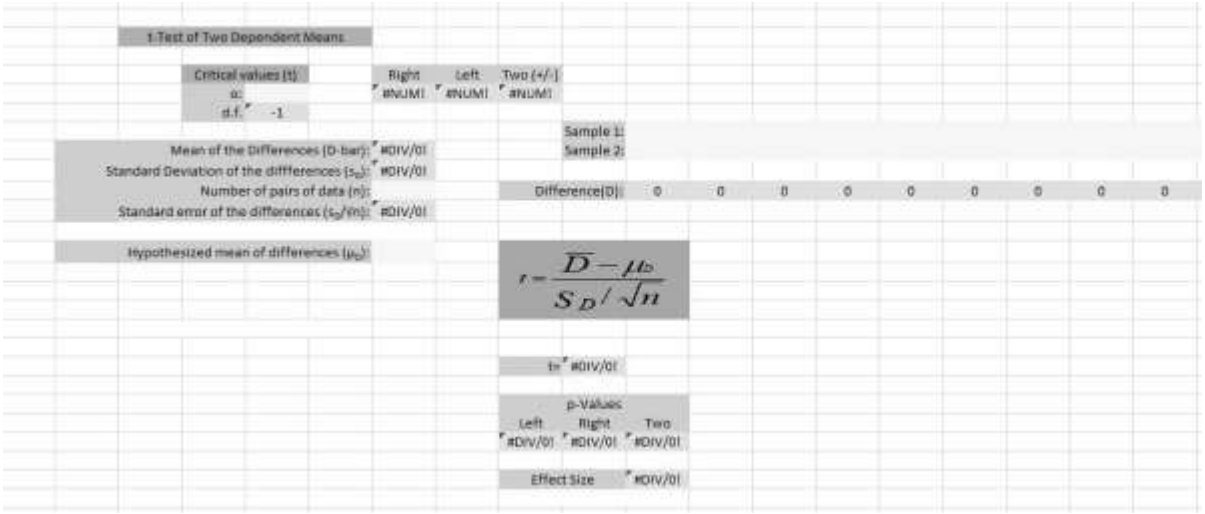
Link to Survey:
https://docs.google.com/forms/d/e/1FAIpQLSe351sHTfernCZ2498BHdvuufijf6AB_JTz5BmFJZcBIL-6nlw/viewform

When you responded to the mid-survey earlier in the year, you mentioned that you would be willing to participate in a final virtual interview with me about your experience in the Blended learning PD program. I have about six questions that I would like to ask you if you are still willing to do this. As a token of appreciation for doing this, I will send you a $10 Starbucks eGift Card. Would you still be willing to schedule a quick chat with me? If yes, please feel free to send me some dates and times in the next few weeks that would work for you to connect with me for about 10 minutes. I'm flexible on times and can do it during the day or evening. Please send me several options of dates and times that work for you.

I really appreciate the feedback you have given me throughout this process as I work on my research study.

Thanks again,
Gina Hartman (Lindenwood University)

Appendix G: Screenshot of Excel Statistics Calculator Used to Run T-Test of Two Dependent Means



Appendix H: NIH Certificate

Certificate of Completion

The National Institutes of Health (NIH) Office of Extramural Research certifies that **Gina Hartman** successfully completed the NIH Web-based training course "Protecting Human Research Participants".

Date of completion: 05/01/2017.

Certification Number: 2378170.

Appendix I: Station Rotation Example from Secondary Classroom

Station Rotations

Table Group	Monday	Tuesday	Wednesday	Thursday	Friday
1	**LMS**	Teacher	Small Group	HHMI/Other	*Lab*
2	*Lab*	**LMS**	Teacher	HHMI/Other	Small Group
3	Small Group	*Lab*	**LMS**	HHMI/Other	Teacher
4	**LMS**	Teacher	Small Group	HHMI/Other	*Lab*
5	*Lab*	**LMS**	Teacher	HHMI/Other	Small Group
6	Small Group	*Lab*	**LMS**	HHMI/Other	Teacher

What to do at each station

all stations are subject to change dependent on content, time, etc.

- Schoology – note taking: you will need to take all of your notes in AVID style in your three-ring binder; lab notes will need to be in your composition notebook
- Small group – discussion with peers, Bozeman videos, critical thinking questions, textbook assignments, closing questions, etc.
- Teacher – finish notes, Clear up misconceptions, ask me content questions
- Lab – Complete lab, includes clean-up, start/finish lab reports etc.

- HHMI/Other – Pre-lab/Post-lab (if needed), review, handouts, Quizzes/Exams*, HHMI Activities**, practice math problems etc.

*Quizzes/ Exams:

  - Quizzes – 1 attempt: may be FRQ's, MC, or Terms etc.
  - Exams – 1 attempt; 1st semester a curve will be given, 2nd semester NO CURVES; Random questions from test bank. Might be paper or Schoology exam. 35 MC's (70 pts) & 1-4 FRQ's (30 pts) depending on point system for those questions. Total of 100 points. This format will help you prepare for the AP Exam in May. The first semester a timer will go off to help you with time management.

**HHMI:

  - As a class we will watch specific sections of videos, answer questions on the videos, small discussion. Almost every unit will have at least one HHMI Activity.

Appendix J: Blended / Hybrid Professional Learning Checklist

Blended / Hybrid Professional Learning Checklist

This checklist is designed to be used as a tool when designing a blended professional learning model for educators. This checklist is based on characteristics of professional learning that educational research has proven effective in changing teachers' practices and improving student outcomes. Successful professional learning models have included a number of these components simultaneously.

	Yes	Partly	No
Active Learning & Modeling			
1. Engages educators in the same learning activities they are designing or being asked to design for their students.			
2. Models high-quality instructional practices and strategies.			
3. Allows educators to choose some learning opportunities based on their personal learning needs.			
4. Provides self-paced learning opportunities.			
5. Accommodates for different learning modalities.			
Content-Focused			
6. Connects content to participants' context (classroom, community, school, district).			
7. Emphasizes improving student learning outcomes.			
8. Aligns with school, district, and/or state priorities.			
9. Includes the empirical research foundation of the content (key researchers, citations, verbal references to literature) and/or explanation of why the topic is important.			
Collaborative			
10. Fosters relationship/community building.			
11. Provides ample opportunities to collaborate.			
12. Provides opportunities for participants to give and receive peer feedback (both positive and constructive).			
13. Includes opportunities for participants to express personal perspectives (experience or thoughts on a concept).			
Feedback & Reflection			
14. Includes opportunities for participants to reflect on their practice, new learning from the session(s), and/or potential impact on their student's development.			
15. Provides built-in time for participants to think about, receive input on, and make changes to their practice.			
Support & Coaching			
16. Incorporates a coaching model or element.			
17. Provides opportunities for participants to receive support from an expert.			
Sustained Duration			
18. Provides multiple opportunities over time for participants to engage in learning around a concept or practice.			
19. Encourages participants to apply/implement their learning between sessions.			
20. Builds on or relates to participants previous professional learning.			

References:
Darling-Hammond, L., Hyler, M., & Gardner, M. (2017). Effective teacher professional development. Palo Alto, CA: Learning Policy Institute.
Hunzicker, J. (2011). Effective professional development for teachers: a checklist. *Professional Development in Education, 37*(2), 177-179.
Noonan, P., Langham, A., & Gaumer Erickson, A. (2013). Observation checklist for high-quality professional development in education. Center for Research on Learning, University of Kansas, Lawrence, Kansas.

Please use this citation to give proper credit for this resource:
Hartman, G. (2019) A mixed-methods study of educators' perceptions and comfort levels of professional learning in a blended model. (Doctoral dissertation, Lindenwood University).

Appendix K: Blended Professional Learning Planning Guide

Blended Professional Learning Planning Guide

Session	Session Outcomes	Professional Learning Format

Hartman, G. (2019) A mixed-methods study of educators' perceptions and comfort levels of professional learning in a blended model. (Doctoral dissertation, Lindenwood University).

Vitae

Gina Hartman has worn many educational leadership hats over the course of her career. Currently, she works for an educational technology company designing and facilitating professional development with educators in school districts across the United States. She also teaches part-time for Lindenwood University and is a school board member in the district where she resides. Gina began her career in education in 2001 as a high school business education teacher for a large public-school district in Missouri. After teaching in the classroom for six years, she moved into a district-level leadership position where she stayed for the next eight years. During this time, she created district curriculum and assessments, developed and implemented professional development programs for teachers and administrators at all levels, and provided instructional leadership and support to educators moving forward with digital learning initiatives and innovative instructional practices.

Gina has earned a Bachelor of Science degree in Business Administration from the University of Missouri (2001), a Master of Arts degree in Teaching from Columbia College (2004) and an Educational Specialist degree in School Administration from Lindenwood University (2015). See is currently seeking her Doctorate in Instructional Leadership from Lindenwood University.

Gina has been recognized in the Midwest and St. Louis area as an educational leader and spotlight presenter at state and regional conferences. She is also a recipient of the International Society for Technology in Education (ISTE) Making IT Happen award and former Co-President of the Educational Technology Association of St. Louis. Gina enjoys working with amazing educators across the United States helping them professionally grow. She is very passionate about creating, facilitating, and advocating for high-quality professional development for educators in this digital age.