1-1-2018

PREPARING FOR BLENDED LEARNING: EXAMINING SELF-EFFICACY OF SECONDARY TEACHERS

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PREPARING FOR BLENDED LEARNING: EXAMINING SELF-EFFICACY OF

SECONDARY TEACHERS

by

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A Dissertation Submitted in Partial Fulfillment of the

Requirements for the Degree of

Doctor of Education

Major: Instruction and Curriculum Leadership

The University of Memphis

May 2018

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Dedication

This manuscript is dedicated to my family for their unyielding support during my doctoral journey. Chad, Peyton, Garrett, and Suzzette have allowed me to pursue my goal of furthering my education. Each of them has contributed advice, solace, and love.

Acknowledgement

I would like to acknowledge the three professors from the University of Memphis who have guided me through my dissertation process. Dr. Amanda Rockinson-Szapkiw led me through the creation process, which included talking me through my most stressful moments. Dr. Deborah Lowther, for stepping in and being available at the right time and lending an unparalleled level of expertise. Dr. Mims was on the interview committee to admit me to the program; he has been my advisor and a steady force throughout the entire process. I would also like to thank the other members of my dissertation committee, Dr. Beth Shumate and Dr. Andrew Tawfik.

Abstract

The purpose of this cross-sectional survey study was to determine the level of teacher self-efficacy to teach in a blended learning environment after receiving blended learning professional development (PD). The study used secondary analysis of existing data and interviews to answer the following research questions:

1. What is the level of self-efficacy to teach in a blended learning environment for secondary teachers after receiving blended learning PD?

2. What component of the blended learning PD contributed the most to teacher's level of self-efficacy?

3. How can the blended learning PD be improved to assist the teachers in improving their level of self-efficacy?

The study used two instruments: 1) Teachers' Sense of Efficacy Scale (TSES) comprised of 24 Likert-style items designed to assess three self-efficacy factors: student engagement, instructional strategies, and classroom management, and 4 opened-ended items to assess quality of the PD, and 2) a semi-structured interview protocol to answer questions 2 and 3. Existing data were derived from TSES surveys completed by 19 secondary teachers who participated in the blended learning PD. Interview data were collected from 5 of the 19 who were randomly selected for interviews. Findings revealed teachers reported more confidence in areas that they can control, which were instructional strategies and classroom management, and less confidence in student engagement, which although teachers may be able to influence, the students themselves are the determining factor rather than the teacher. Results of open-ended questions and interviews suggest the most beneficial PD components were learning how to teach with the

blended learning software and how to differentiate instructional strategies, whereas participants also revealed that more face-to-face time might be beneficial to raise teacher self-efficacy to teach in a blended environment. This study has implications not only for the school district involved in the study, but also for other schools wishing to implement a more personalized approach to instructional strategies through a blended learning curriculum. Future research could involve a larger and more diverse group of participants and showcase secondary schools implementing a successful blended learning program.

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CHAPTER ONE: INTRODUCTION

This study was motivated by a problem seen in practice, low student achievement on standardized tests in an urban public school district with an enrollment of 8,576 students. There is a need to improve instruction to address student deficiencies. The traditional instructional method for the school district in this study is in class, direct instruction; however, a potential instructional solution is the blended learning model as it provides a more individualized approach to instruction that may increase achievement. For example, the Gates Foundation funded 62 schools using personalized instruction. Blended learning is a platform that makes personalized instruction possible. Their ongoing study found that students using personalized learning for instruction have an increased academic growth in a two-year period compared to their peers in other schools (Pane, Steiner, Baird, & Hamilton, 2015).

While it is noted that teacher self-efficacy is aligned with student achievement, using a new instructional approach requires effective professional development. If a blended learning instructional strategy is to be adopted, teachers will need professional development to learning about the new strategy. The professional development must positively influence teachers' self-efficacy. Tschannen-Moran, Woolfolk Hoy, and Hoy (1998) argued that self-efficacy describes "the self-perception of competence rather than an actual level of competence" (p. 211). Meaning if teachers leave professional development with the self-perception that they can accomplish a new instructional method, then there is a higher likelihood of success.

In this study, 20 secondary teachers were provided with professional development (PD) on blended learning and evaluate teachers' perceptions and self-efficacy to teach in a blended learning environment after the training. Topics that were introduced during training were

creating online content, technology tools used to create content, and how to blend their current

pedagogy to achieve personalized learning (Jobst, 2016).

Background

Blended learning is an instructional method that combines in-class direct instruction and

online instruction. The student has some element of control over time, place, path, and/or pace

for the online component (Basham, Smith, Greer, & Marino, 2013; Jobst, 2016; Stalker & Horn,

2012). Kazu and Demirkol (2014) examined 12th grade students biology academic performance

level in an experimental study with two groups; an experimental group using blended learning

and a control group using a traditional learning environment with face-to-face instruction. Pre-

and posttests were used with both groups to measure academic growth. The experimental group

using blending learning exhibited the most growth in academic achievement in biology. A report

from the United States Department of Education (USDOE) showed that students taught with a

combination of online and face-to face components performed better on average than students in

a traditional learning environment (Means, Toyama, Murphy, Bakia, & Jones, 2010).

As no single method can address all of the learners needs in a classroom, blended

learning enables teachers time in class to work with small groups who are struggling with grade

level standards, while other students work at their own pace, utilizing tools that fit their learning

style (Alijani, Kwun, & Yu, 2014). The growth of a diverse student population requires the need

to reexamine instructional strategies to determine if student needs are being met (Schrum,

Burbank, & Capps, 2007). The formula of a teacher telling a student information, going over

how to complete an assignment together, then independent practice is not working to improve

student achievement (Enydey, 2014). "Blended models often address the needs of the most

advanced students while simultaneously meeting the needs of students who have the most

academic difficulties" (Alijani et al., 2014, p. 129). Students performing below grade level can become frustrated in traditional classroom environments because they feel as if they are holding others back or being left behind. Conversely, those who are able to work independently in a blended learning environment have the freedom to work rather than wait on others to finish an assignment (Jacobs, 2016; Kronholz, 2011).

Blended learning is a potential instructional solution for K-12 education; however, more research is needed for implementation in the K-12 environment. The report from the USDOE also notes that there are a very small number of blended studies for K-12 education considering the rapid growth of online instruction in the U.S. (Means et al., 2010). The majority of the research for blended learning has focused on higher education, providing few examples for K-12 education. The relatively new implementation of blended learning for K-12 education has resulted in few studies about blended professional development specifically designed to support K-12 blended learning (Dawson & Dana, 2014). Through the use of verbal persuasion in professional development, teachers are given information about new ideas and are provided strategies that contribute to teacher's skills. The professional development should enhance teacher self-efficacy to accomplish a new task (Tschannen-Moran et al., 1998). Adequately preparing secondary teachers to implement a blended environment has yet to be thoroughly investigated.

Professional development is needed to prepare teachers to implement a blended learning curriculum. The training should focus on both technology tools and instructional techniques for successful technology integration (Potter & Rockinson-Szapkiw, 2012). Effective professional development is needed to provide teachers with,new skills, resources, and knowledge to implement blended learning in their classrooms (Sugar & Slagter von Tryon, 2014).

The results of this study will help decrease the deficiencies of the literature for the K-12 environment, specifically preparing secondary teachers to teach in a blended learning environment. Through the data gathered in the study, professional development programs may be improved based on teacher's need feeling confident implementing a new instructional method.

Problem of Practice

There was a need to improve instructional strategies in order to increase student test scores in the school district in which this study occurred. A potential solution to the problem was to transition to a blended learning environment. The topic this study aimed to address was how to effectively train secondary teachers to teach in a blended learning environment. The goal of the training was for teachers to leave the professional development with a high level of self-efficacy to teach in a blended learning environment.

First, I would like to provide background on the standardized test that is required for all students in the district grades 3-12 and what the district previously did to address the low test score problem, which yielded little to no improvement. The standardized test the students take is the ACT Aspire. The results are in the form of performance level descriptors (PLD).

> PLDs outline the knowledge, skills, and practices that students perform at any given level achieve in each content area at each grade level. They indicate if the students are academically prepared to engage successfully in further studies in each content area, the next grade's material and, eventually at the high school level to verify that they are college and career ready (ACT Aspire, n.d.).

There are four PLDs: needs support, close, ready, and exceeding. The goal is for students to be at the ready or exceeding levels. Table 1 shows test data for secondary students in the

school district for the third quarter of testing from 2016-2017. The data in the table shows the percentage points behind the "Ready" level in each subject tested.

Table 1

2016-2017 Percentage below the "Ready" level for each grade and subject

Subject Area	Grade Levels				
	6th	7th	8th	9th	10th
Reading	12%	15%	12%	11%	16%
Science	8%	21%	17%	17%	22%
Math	1%	7%	8%	10%	14%

Source: ACT Aspire 2016-2017 testing data

Since the onset of state mandated standardized ACT Aspire testing during 2014-2015, the district has habitually landed below the state level. The district hired three secondary specialists at the beginning of the 2016-2017 school year to improve test scores. The thinking behind the decision was that the specialists would work directly with teachers and test data to improve instruction in the classroom. Unfortunately, the subsequent year set of test scores showed no significant improvement, possibly because no new instructional strategy had been employed. The trend in the test scores showed that higher achieving students continued to excel, because they were not lacking foundation skills, so teachers may have continued their instruction in the same manner and the high achieving students continued to excel. According to test data, the high achieving students made up approximately 5% of the student population in each grade, thus the majority of students lacked basic skills to perform on grade level and achieve the "Ready" or "Exceeding" levels.

This problem is of significance because it shows that the district is not servicing the students properly according to state standards. The stakeholders directly affected by this problem

are the students because they lack skills that will allow them to learn age appropriate standards. Teachers and other district personnel are indirectly affected because of the stress of trying to raise test scores. The option to use blended learning for classroom instruction has been offered to teachers. Blended learning has an advantage over traditional direct instruction because of the opportunity for more interaction between teachers and students and a more personalized approach to instruction that facilitates differentiation (Watson, 2008). Blended learning is different than face-to-face instruction; therefore, teachers required professional development for instruction and content development to successfully implement the blended learning model.

Providing teachers with a new method to employ in their classroom can create uncertainty. To build confidence in teachers, the professional development received should provide a belief that when implementing blended learning teachers will succeed with a high level of competence (Tschannen-Moran & Woolfolk Hoy, 2001). The solution that may arise from this research is determining the effectiveness of the professional development provided. If the self-efficacy level is high, the teacher's belief that they can cope with a difficult situation will strengthen (Bandura, 1977). In the instance of this study, the difficult situation is working to increase test scores of low achieving students. As applied to this study this definition of teacher efficacy is appropriate, "the teacher's belief in his or her capability to organize and execute courses of action required to successfully accomplish a specific teaching task in a particular context (Tschannen-Moran et al., 1998, p.233).

Problem Statement

Blended learning is an instructional model that can provide teachers the opportunity to personalize learning to increase student achievement (Pane et al., 2015). In order to effectively implement blended learning, teachers required professional development to understand what is

needed to create an effective blended learning classroom. Current literature provides some information about transitioning to a blended learning environment in higher education, but there is a definite gap in the literature for those wanting to implement blended learning in the K-12 environment and what professional development is effective (Archambault & Kennedy, 2014; Dawson & Dana, 2014; Enyedy, 2014; Kassner, 2013).

Purpose Statement

The purpose of this cross-sectional survey study was to examine the level of self-efficacy of secondary teachers at an urban secondary public school district to teach in a blended learning environment after receiving blended learning professional development. The variables in the study were blended professional development and self-perceived level of self-efficacy. Professional development is generally defined as a comprehensive, sustained, and intensive approach to improving teachers' effectiveness in raising student achievement (Dawson & Dana, 2014). Blended learning is a formal education program in which students (in this study, the students are teachers) learn at least in part through online delivery content and instruction with some element of teacher control over time, place, path, and/or pace and at least in part at a supervised brick-and mortar location away from home (Jobst, 2016). The other variable, self-efficacy, is generally defined as an individual's beliefs and judgments of their capabilities to manage and execute necessary courses of action (Bandura, 1997). The narrative definition of self-efficacy in this study is the level of self-efficacy to implement blended learning a teacher has after receiving blended professional development measured using a Likert scale survey and opened ended questions.

Research Questions

The research questions for this study are**:**

Research Question 1. What is the level of self-efficacy to teach in a blended learning environment for secondary teachers after receiving blended learning professional development?

Research Question 2. What component of the blended learning professional development contributed the most to teacher's level of self-efficacy?

Research Question 3. How can the blended professional development be improved to assist teachers in improving their level of self-efficacy?

Definitions

Definitions for the following key terms provide a context for their meaning within this paper:

Andragogy. Andragogy is the art and science of helping adults learn (Knowles, 1984).

Blended Learning. Blended learning is a formal education program in which students learn at least in part through online delivery 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 (Basham et al., 2013; Jobst, 2016; Stalker & Horn, 2012). Combining online delivery of educational content with the best features of classroom interaction and live instruction to personalize learning, allow thoughtful reflection, and differentiate instruction from student-to-student across a diverse group of learners (iNACOL, 2011; Watson, 2008).

Digital Divide. The digital divide is the divide between the information and communication technologies available to individuals and societies at different ends of the socio-economic spectrum (Bonk & Graham, 2006). The digital divide involves socioeconomic status, disabilities, and physical location causing lack of access to digital tools (Ribble & Bailey, 2007).

Face-to-face instruction. Face-to-face instruction occurs when the instructor and student meet at the same time and location utilizing a lecture/discussion medium (Stern, 2004).

Online learning program. An online learning program is an organized offering of courses delivered primarily over the Internet (iNACOL, 2011). Learning that takes place partially or entirely over the Internet (Means et al., 2010).

Personalized Learning. Personalized learning is instruction that is designed to accelerate student learning by tailoring instruction to individuals' needs and skills as they go about fulfilling curricular requirements, customized or individualized to help each individual student succeed (Horn & Stalker, 2015; Kallick & Zmuda, 2017).

Professional Development. Professional development involves a comprehensive, sustained, and intensive approach to improving teachers' effectiveness in raising student achievement (Dawson & Dana, 2014). Professional development is the process of learning and keeping up-to-date in one's area of expertise for both personal development and for career advancement (Phu, Vien, Lan, & Cepero, 2014).

Professional Learning Community. A professional learning community (PLC) is a group of educators coming together to improve student achievement by ensuring students learning, removing barriers to success, creating a culture of collaboration, and focusing on results (Dufour, 2004).

Teacher efficacy. Teacher efficacy includes educational outcomes such as teachers' persistence, enthusiasm, commitment and instructional behavior, as well as student outcomes such as achievement, motivation, and self-efficacy beliefs (Tschannen-Moran & Woolfolk Hoy, 2001). Teacher efficacy also includes things such as an individual's beliefs and judgments of

their capabilities to manage and execute necessary courses of action (Bandura, 1997) and ability to accomplish critical instructional tasks (Wolters & Daugherty, 2007).

        Traditional classroom setting. A traditional classroom setting is a course where no online technology is used. Instruction is delivered orally or in writing (Allen & Seaman, 2011).

CHAPTER TWO: REVIEW OF THE LITERATURE

This chapter is a literature review related to the current study and is divided into two sections: the theoretical context and an overview of blended learning and professional development. The literature review was constructed using peer reviewed articles, books, and online resources. The most frequent search terms used were, blended learning, effective professional development, self-efficacy, and andragogy.

There are two theories that are grounded in the current study, Bandura's (1977) theory of self-efficacy and Knowles's (1984) theory of Andragogy. Both are discussed in the theoretical section below.

As mentioned previously, there is literature that provides information about preparing teachers for blended learning in higher education, but the literature provides little information for preparing teachers in secondary education. The literature review for the current study examines existing research centered on preparing teachers for blended learning, followed by literature that discusses effective professional development for teachers preparing for a blended learning environment.

Theoretical Context

The theory of self-efficacy and the adult learning theory of andragogy were selected because of their direct connection with the subject matter of secondary teachers reflecting on their self-perceived level of readiness to teach using blended learning after receiving professional development.

Self-Efficacy

The theory of efficacy is a person's belief in the ability that he/she can produce a desired outcome (Bandura, 1977). As applied to education, teacher self-efficacy is the belief that one can produce improved student achievement though commitment and persistence in instructional practice (Tschannen-Moran & Woolfolk Hoy, 2001). Bandura (1977) explains that outcome expectancies and efficacy expectancies are different. Outcome expectancy is an estimate that behavior will produce a certain result. Efficacy expectancy is the belief that one can produce the behavior to produce a desired outcome, but if an individual has doubt that they can personally produce that outcome, then the information they received to produce that outcome will not influence their behavior. Bandura (1977) also states that the desire to accomplish a task coupled with the negative connotation of insufficiency provides an incentive for people to take action. People will persist and rise to a standard through self-motivation rather than face failure. High efficacy expectations will produce more effort to overcome obstacles and adverse experiences (Bandura, 1977). Table 2 lists Bandura's four sources of efficacy expectations accompanied by an explanation.

Table 2

Efficacy Expectations

Source	Explanation
Performance Accomplishment	Based on personal mastery experience. If successful, mastery raises expectations and failure will lower mastery expectations.
Vicarious Experience	Observation of other's success provides confidence that the observer may also improve and gain success with persistence.
Verbal Persuasion	Confidence is gained when it is suggested that once can be successful even when overwhelmed in the past.
Emotional Arousal	Anxiety can reduce performance level. Efficacy may be higher when not faced with adverse situation.

Source: Bandura (1977)

These four sources can be driving factors in the level of teacher efficacy to implement a new instructional model, specifically blended learning. Change can invoke fear, which is a central theme in the four sources. What can be done to reduce fear is to provide professional development that reduces fear, by taking into consideration the four sources. The professional development should create small tasks that will allow for incremental success to building confidence in mastery, provide examples that demonstrate success of the blended learning model, build confidence through positive verbal feedback, and reduce anxiety by providing ongoing support. The professional development should allow participants to focus on individual context areas and create material that they may use in their class (Dabner, Davis, & Zaka, 2013). The use of Bandura's efficacy expectations in relation to this study's professional development may be seen in Chapter three of this paper.

Effective professional development should integrate Bandura's (1977) sources to elevate teachers' efficacy. If the information provided to a teacher in a professional development session does not build confidence in the teacher to implement a strategy, then the information the teacher receives does nothing to influence the behavior of the teacher in the classroom. Thus, if educators want to invoke change in the classroom, the professional development must be infused with motivation for teachers to want to change. Blended learning was a new concept for the teachers in the current study. The professional development teachers receive should convince teachers the blended learning model will increase academic growth in their students while giving the teachers confidence implementing a blended learning model.

Self-efficacy in education is a reflective practice and measures a level of confidence to design and implement activities. Teachers with higher levels of efficacy are typically more willing to try new innovative techniques to meet the needs of students through personalization

(Wolters & Daugherty, 2007). Improvement of student learning and performance is the focus in education. "Teacher self-efficacy is one of the teacher characteristics that is consistently tied to student achievement" (Woolfolk, Rosoff & Hoy, 1990, p.137). The effectiveness of a teacher has a direct effect of student achievement. Yoo (2016) conducted a study with K-12 teachers to examine the effect online professional development had on teacher's level of self-efficacy. The level of self-efficacy increased with the group of teachers through effective professional development based on the fact that they were provided useful tools and instructional strategies that they could use in class immediately. The study also concluded that professional development could directly affect the level of self-efficacy depending if the experience was positive or negative, which would translate into the quality of instruction the teacher delivers in the classroom.

Andragogy

The theory of adult learning used by Malcolm Knowles is andragogy. Knowles (1984) defined andragogy as the art and science of helping adults learn. The key components of the instruction are to create activities that learners may construct knowledge based on what they experience and the ability to relate the knowledge to real life topics (Knowles, 1988). Knowles presents five assumptions of adult learners as shown in Table 3.

Table 3

Knowles five assumptions of adult learners

Assumption	Explanation
Self-Concept	Adult learning transitions from being a dependent learner as adolescents to being self-directed learners as adult.
Adult Learner Experience	Adult learners gain resources for learning as they mature.
Readiness to Learn	A person becomes more ready to learn as an adult and they become focused on learning required tasks.
Orientation to Learning	As a person matures, the focus of learning shifts from subject centered to problem centered, transitioning into a self-directed learner.
Motivation to Learn	Motivation to learn shifts to internal motivation as a person matures.

Source: Knowles (1988)

Adult learners are intrinsically motivated and need to understand why they are learning about a particular topic and why it is of value to them (Grosz, 2012). The trainer of adult learners should create an environment that promotes ease of learning and is accepting of all level of learners. The trainer needs to gain trust of the teachers, encouraging collaboration and active participation. The knowledge imparted should be applicable to life topics applicable to current job situations (Giannoukos, Besas, Galiropoulos, & Hioctour, 2015).

There is a hurdle when implementing professional development for adults because many adults were taught as students using an instructional model where the teacher provided all of the information. Adults are not conditioned to learning that is self-directed (Knowles, 1988). Teachers expect their students to be self-directed, but first teachers must understand how to learn independently themselves. The goal of the trainer should be to impart knowledge, but also

encourage the learning to be self-directed so the trainees seek knowledge independently (Giannoukos et al., 2016).

The term digital andragogy was introduced in a study conducted by Blackley and Sheffield (2015) with undergraduate college students using surveys to collect data examining the learning needs and concerns of the students. The researchers expand the theory of andragogy to digital andragogy by incorporating 21st century learning skills. Blackley and Sheffield (2015) describe considerations when designing digital andragogy. The design should be determined by unique needs to include specific directions, desired pace to complete work, feedback given through progress of unit, and the role of the learning management system is to provide access to material.

The theory of andragogy and digital andragogy relates to the current study because all of the participants are adult learners. All teachers in the study are participating voluntarily and are eager to learn a new instructional strategy, but need to be put at ease and encouraged because this is a new concept for many of the participants. Andragogy is a theory that can be used to prepare effective professional development for adults and in this situation, teachers. Time allotted for professional development can be sparse; therefore taking into consideration the concepts for andragogy can assist in creating professional development that teachers view as worthwhile with a key concept being immediate impact on their job. The professional development for this study was delivered via a blended learning format; therefore an understanding about blended learning is necessary to determine how to proceed with the construction of the professional development class.

Preparing Teachers for Blended Learning

Two main topics are discussed in following review of literature related to preparing teachers for blended learning: 1) blended learning and 2) effective professional development, which includes a specific discussion on professional development for blended learning.

Blended Learning

Blended learning is model that has been used in higher education, however blended learning has only recently been implemented in K-12 education. The gain in popularity can be attributed to the flexibility that is associated with blended learning and instructors desire to engage learners in a media rich learning environment (Duhaney, 2012; Napier, Dekhane, & Smith, 2011). Blended learning allows teachers to create differentiated instruction in the form of digital content to serve each student and their individual needs by allowing students to work at an independent pace and maximize their learning (Chan, 2014). The use of technology has a definite role in instruction. Integrating technology into instruction without changing the instructional model is not transforming learning. While blended learning encourages the use of technology for instructional purposes, technology integrated into instruction should be driven by pedagogy, and not be used for the sake of using technology (Basham et al., 2013; Enyedy, 2014).

Blended learning defined. Although there are many models of blended learning, the general definition of blended learning is an instructional mix of face-to-face engagement coupled with 30-79 percent of learning being online either synchronously or asynchronously (Allen & Seaman, 2011). The advantage is that the online learning component is done independently, giving the student control over time, pace, and place that they complete the learning; therefore, learning is no longer restricted to the school day or the traditional classroom setting where there is no online learning and instruction is delivered orally or in writing (Allen & Seaman, 2011).

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Students may choose the path and pace work through the content, thereby giving them the opportunity to revisit topics if necessary (Duhaney, 2012; Stalker & Horn, 2012). There has to be both an online and an offline component present for instruction to be considered blended learning (Fletcher, 2012; Gonzales & Vodicka, 2012). Stalker and Horn (2012) added to the definition stating that blended learning is a formal, supervised online education and the face-to-face portion is in a brick and mortar location away from home. Blended learning provides teachers the opportunity to differentiate instruction for all students in their classes and provide personalized instruction and holds the potential to transform both teaching and learning (Duhaney, 2012; Smith, Basham, Rice, & Carter, 2016).

Blended learning components. There are four common approaches to blended learning: the rotation model, a flex approach, the self-blend model, and the enriched-virtual model (Basham et al., 2013; Gonzales & Vodicka, 2012; Stalker & Horn, 2012). Table 4 provides definitions for each of the models by Stalker & Horn (2012).

Table 4

Models of blended learning

Model	Explanation
Rotation Model	Students rotate on a fixed schedule provided by the teacher.
Flex Model	Students move at an individually customized schedule.
Self-Blend Model	Students choose to take one or more courses entirely online to supplement their traditional courses.
Enriched-Virtual Model	Whole school experience in which students divide their time between attending brick-and –mortar campus and learning remotely with online instruction for all courses.

Source: Stalker & Horn (2012)

The online learning environment may include learning tools for collaboration, online learning materials to be used at a student's pace, and a social media platform. The online

components are used in conjunction with face-to-face sessions and small group meetings (Sorden & Munene, 2013). The purpose of blended learning is to have a balance between the online component and the face-to-face component. Blended learning classrooms will have a different proportion of each of the two components (Yapici & Akbayin, 2012).

Benefits of blended learning. The flexibility of blended learning is what attracts students to blended learning classes. Blended learning offers more scheduling opportunities for students and students have control over the pace in which they learn. Students are able to take more classes and participate in more activities when blended opportunities are available, particularly in K-12 environment in which extracurricular activities are integrated into the daily schedule (Duhaney, 2012; Pace & Mellard, 2016). For example, the school district in this study offered one blended learning class as a pilot for future classes. The class met once a week face-to-face before school and the remainder of the course was online. The students in the class were able to add an additional class to their schedule allowing them the opportunity to take eight classes during the semester, rather than seven, which was the norm.

Blended learning can be transformational because of the ability of students to learn in a synchronous or asynchronous environment (Garrison & Kanuka, 2004). A blended learning environment enables teachers and students to do things educationally that they have not been able to do before in terms of student/teacher communication, rapid feedback from teachers, and providing flexibility of when students are able to learn (Toporek, 2015). Examples include students taking a self-grading Google quiz online and receiving a score upon submission rather than waiting for the teacher to hand grade the quiz; and teacher/student communication within a Google Doc simultaneously to make improvements to a writing assignment. Blended learning provides teachers with satisfaction because the tools allow for immediate interaction with

students, increase student engagement, and the environment gives teachers the opportunity to personalize learning for student improvement (Duhaney, 2012).

The blended learning model allows students to constantly work rather than waiting on other students before moving on to new topics. Teachers can design instruction so students may work at an independent pace based on mastery of a skill (Kronholz, 2011). Blended learning allows for student ownership in their learning and students are active participants in how they learn. Teachers should be instructed to allow students to determine the path in which they learn (Gecer & Dag, 2012). Blended learning offers the use of many digital tools and accommodates various student learning styles; therefore, the question is not if a teacher wants to blend instruction, but which blended method will work best with their students. As a new generation of teachers enter the workforce and students enter the classroom, the use of technology is expected, and blended learning offers the opportunity to effectively integrate technology into the curriculum, as well as assisting with student achievement (Bonk & Graham, 2006; Clark, 2012).

The school district in this study had purchased thousands of new devices in the past four year for mandatory end of course online testing. To utilize the devices for more than testing and to better prepare the students to use the devices during testing, school district administration encouraged the use of the devices on a daily basis. It was at that point the teachers in this district began learning more about the integration of technology into the curriculum through professional development. If teachers are expected to effectively use the devices in their curriculum, then the professional development they received needed to build a high level of efficacy and confidence to use technology in their classroom.

Implementation barriers for blended learning. Recent technological advances have allowed for learning to occur in a blended environment. Affordable technology has allowed more

schools to acquire technology that provides a potential challenge for implementation of a

blended learning environment (Bonk & Graham, 2006). Students and teachers lack digital skills

to transition to blended learning, which makes training necessary. The potential for academic

success with a blended learning model necessitates the need for the transition and effective

training of teachers.

The change in pedagogy for a blended environment also presents a challenge. Teachers

are learning a new instruction delivery method, which requires a change in preparing and

designing lessons. In many teacher preparation programs, especially for veteran teachers,

blended learning was not part of the curriculum. Teachers must change their thinking from the

traditional lecture/practice formula to fit the new instructional delivery method of blended

learning planning and instruction (Precel, Eshet-Alkalai, & Alberton, 2009). There is a

temptation to design the technology aspect before identifying pedagogical requirement. The

instruction should drive the technology, not the other way around, by first identifying what

students need to learn, then finding the right technology tool that will enhance the learning

(Fletcher, 2012).

Although blended learning contains the best of both the face-to-face and online learning

components, if teachers are not trained well and the courses are not designed well, blended

learning could bring out the worst of those two components (Bonk & Graham, 2006). There in an

increased demand on instructor time when implementing blended learning and a need to provide

teachers with technological skills to improve classroom instruction. Teachers should understand

the extra time demands it takes to develop a blended curriculum (Bonk & Graham, 2006;

Graham, Woodfield, & Harrison, 2013; Picciano, Seaman, & Allen, 2010). The design of

classrooms needs to reflect flexible learning environments as well (Watson, 2008), which is often a challenge to those not ready for an innovative style of learning.

A digital divide occurs when students are expected to work online away from the school setting to complete assignment, but do not have access to technology (Ribble & Bailey, 2007). A digital divide may trigger a homework gap, which is a barrier construed from the lack of a reliable Internet source outside of the school. Students that face a homework gap may have to find alternate sources for completing work outside of school or not do the work at all (McLaughlin, 2016). Teachers may encounter issues stemming from the digital divide when implementing blended learning. If online work is expected to be completed away from school, teachers must develop a plan for students who do not have access to technology at home (Bonk & Graham, 2006).

It is evident that the barriers to blended learning are significant and may cause teachers that are new to the instructional model to become frustrated and discouraged. Effective professional development is crucial for successful implementation of the blended learning model.

Effective Professional Development

The district in the study requires its teachers to acquire 60 hours of professional development each year. The professional development program has experienced challenges because of individual teacher's curriculum requirements, the time frame of when professional development is conducted (primarily in the summer), and the commitment of teachers wanting improvement. This has led to the professional development being offered not being cohesive, being one note, and not ongoing.

When professional development is effective, teachers are provided with new skills, resources, and knowledge to implement in their classrooms (Sugar & Slagter von Tryon, 2014).

The professional development should directly relate to their job, and they should find value in what is being taught (Hunzicker, 2010). Teachers want a choice in professional development and it is most effective when they can select sessions they feel will benefit them. The environment should be supportive, especially when learning new technology (Mirriahi, Alonzo, McIntyre, Kligyte, & Fox 2015).

Ongoing. Optimal faculty training takes place over time, allowing faculty time to implement new instructional strategies, and evaluate changes that may need to occur in training (Grosz, 2012). Meeting once does not allow for the iterative process that is needed for teachers to gain mastery over a new teaching style. Teachers need time to try out the new process, then meet again to share ideas and get potential solutions for issues they may incur (Hunzicker, 2010). If training involves technology and is not ongoing, there is the potential for expensive technology equipment to sit unused and quickly become antiquated (Potter & Rockinson-Szapkiw, 2012).

Professional Learning Communities. Professional learning communities (PLC) is a group of educators coming together to bolster students success by creating a culture of collaboration, removing barriers to success, ensuring that students learn, and focusing on results (Dufour, 2004). A PLC should be in place to act as peer support for solving problems and sharing new ideas. PLCs should meet regularly and be supported by school leadership (Hunzicker, 2010). PLCs offer teachers the opportunity to collaborate and share successes and struggles, especially when implementing a new instructional model (Potter & Rockinson-Szapkiw, 2012). According to the International Association for K-12 Online Learning (iNACOL), professional development for online instructors should reach beyond the school and extend to PLCs so teachers have the opportunity to collaborate with other educators (iNACOL, 2011).

Technology in professional development. The focus of the professional development should not only relate to a new technology skill, but also demonstrate how to implement that technology skill into a teacher's content area (Hunzicker, 2010). Relating back to Bandura's self-efficacy theory, the efficacy source of a vicarious experience by modeling behavior with clear outcomes can create greater behavioral improvements (Bandura, 1977). Teachers should also have the time to understand the new skill and how it relates to their curriculum (Mirriahi et al., 2015). The professional development should not just demonstrate how to use the technology tool, but should also be grounded in pedagogical approaches (Sheffield, McSweeney, & Panych, 2015).

Teachers should not view technology as a trend or a reward to use in class, but as a tool that enhances instruction. Using technology with instruction extends learning beyond the classroom and allows learning to take on global implications (Jimoyiannis, Tsiotakis, Roussinos, & Siorenta, 2013). If a teacher is not comfortable with the basic operation of equipment, extra assistance may be required outside the normal professional development session that has a prime focus on technology. To gain strong teacher buy in, teachers must understand how the technology is connected to their pedagogy (Potter & Rockinson-Szapkiw, 2012).

Professional development can have negative connotations when not conducted correctly. It can be viewed as a waste of time, not applicable, and simply something that is required if teachers do not see a value in what is being taught. Being part of a community that meets regularly to discuss and solve problems is a plus for teachers, especially when the expectation involves using technology with students to improve academic success. Teachers gain a high level of efficacy during effective professional development, and this can lead to student improvement in the classroom.

Professional development for blended learning

Professional development for a blended learning environment is relatively new for the K-12 sector and had never been conducted for the district in this study. The goal for the professional development to implement the blended learning process should be the idea that transformation is going to take place and a shift in instructional strategy will occur. The process should mirror the same technology that the teachers will use with their students (Kassner, 2013; Watson, 2008). In a blended learning professional development environment, teachers are allowed to experience a student-centered environment, so they may easily implement a student centered learning environment in their classroom (Duhaney, 2012).

Implementing blended learning through professional development. Implementing blended learning begins with a professional development program that effectively trains the instructors. Part of the process should provide the opportunity for faculty to redesign current face-to-face courses, which includes time and support (Grosz, 2012). If blended learning is to be successful, the instructional design of the course should be a driving factor. The instructional design of the course should reflect the needs of the learners (Duhaney, 2004). True learning transformation can take place with a digital literate staff that is comfortable with a blended environment to maximize technology and lead instruction in an online environment (Mirriahi et al., 2015).

Professional development is going to have a different perspective when preparing teachers to teach in an online environment because their students are already adept at using a variety of technology and teachers need to develop new technical skills to create online content (Duhaney, 2012; Ellis & Phelps, 2000). Prospective blended learning teachers, should be trained in a blended learning environment. There must be ownership and buy-in from teachers who are

going to teach in a blended environment. Training should allow teachers time to experiment and make innovative changes in their instruction. Teachers must feel empowered to take the tools they have been presented in professional development and blend them in their own way as capable professionals (Clark, 2012; Fletcher, 2012).

In Waver's 2013 dissertation mixed method study with four K-12 teachers participating in a pilot program to implement blended learning, the researcher described the professional development program components. The eight-week online course included definitions and models of blended learning, activities and technology tools, as well as examples of complete lesson plans for blended learning. Professional development should have teachers more actively engaged in learning technology to create their own content. Training should include how to use technology coupled with new pedagogy strategies to teach online (Wayer, 2013). Lack of technology training may result in the teacher not understanding how to appropriately use technology with their own instructional content (Basham et al., 2013; Ellis & Phelps, 2000). Beginning the transition into blended learning should not focus on technology, but what the teacher wants the learning to look like. After this has been established, it is appropriate to begin thinking about what technology will support the learning goal (MIT Technology Review, 2015).

A survey study of 52 schools and 1,382 teachers was conducted by Inan and Lowther (2009) to determine factors affecting technology integration in K-12 schools. The study concluded that teachers' computer proficiency positively affects their technology integration. The success of technology integration depends on the teacher's understanding the benefits of technology by providing teachers with the knowledge, support, and tools to effectively use technology in the classroom (Gu, Zhu &, Guo, 2012).

Ongoing, content driven, and supportive are characteristics of any effective professional development program. Because of the technology and pedagogy changes involved in transitioning to a blended learning environment from an in-class direct instruction environment, proper professional development must be provided to support the transition, which can make or break the success of the program.

Driving instruction in blended learning. A point to emphasize in professional development is online content should inform the face-to-face instruction, by discovering which groups need more reinforcement and which groups are ready to move to new material. Learning from how students performed while completing online content informs how to proceed with face-to-face instruction. The face-to-face instruction time may be traditional direct instruction, but more frequently it will be used to address individualized needs of students who have deficiencies in the grade level instructional standards (Fletcher, 2012; Stalker & Horn, 2012; Watson, 2008). Professional development should allow time to address the changes that go along with blended learning. The change in instruction, peer collaboration, data analysis, and classroom management should be addressed in ongoing professional development (Chan, 2014).

A potential design for teachers to employ when utilizing blended learning is to first meet face-to-face with students to give the students an idea of what to expect from the class, particularly the online portion. It is suggested that blended learning may be deployed gradually beginning with a face-to-face meeting, then the instructors can determine which online strategies will help students achieve learning goals (Duhaney, 2004).

Summary

Teachers and students alike are no longer satisfied learning in a static environment with a lecturer feeding information. Using a blended learning environment for both teacher professional

development and student instruction can enhance learning outcomes (Duhaney, 2012). Teachers need to remember that using technology is not a substitute for poor teaching; the technology does not replace the pedagogy, but assists the pedagogy. Students do not learn from technology, but learn from teachers who employ good teaching strategies that integrate technology (Khan, 2014). Blending learning is time consuming to design and at times, technology will fail. Resources need to be available when technology is not an option and staff members should know how to access the resources to adequately service their students (Benson, Anderson, & Ooms, 2011).

Once the decision is made to transition to a blended learning instructional model, the proper course of action for professional development must be determined. Necessary elements for effective professional development should include developing pedagogy for online content, technology training to create and incorporate online content, and the ongoing support needed during and after training.

This study was necessary for the K-12 environment, because there is little information about effective professional development to train teachers to transition to a blended learning instructional model. Training was provided to teachers and feedback given on the training program, which in turn will influence future training for the district and for other districts in the K-12 environment wishing to implement a blended learning instructional model.

CHAPTER THREE: METHODOLOGY

Introduction

The purpose of this cross-sectional survey study was to determine the level of teacher self-efficacy to teach in a blended learning environment after receiving blended learning professional development. The study used secondary purpose of existing quality assurance data and interviews to answer the following three research questions:

Research Question 1. What is the level of self-efficacy to teach in a blended learning environment for secondary teachers after receiving blended learning professional development?

Research Question 2. What component of the blended learning professional development contributed most to teacher's level of self-efficacy?

Research Question 3. How can the blended learning professional development be improved to assist teachers in improving their level of self-efficacy?

This chapter presents the method and design, a description of the participants and learner characteristics, the setting, the instructional design intervention, the instruments, data collection procedures, data analysis, and the delimitations, limitations, and ethical issues.

Method and Design

This study used a cross-sectional survey design to determine the level of teacher self-efficacy to teach in a blended learning environment after completing the "Blended Learning in the Secondary Classroom" professional development program. The blended professional development variable was generally defined as s a formal education program in which students learn at least in part through online delivery 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 (Jobst, 2016). The variable, self-efficacy, was generally defined as an individual's beliefs and judgments of their capabilities to manage and execute necessary courses of action (Bandura, 1997). The definition for self-efficacy for this study was a teacher's belief in her or his capabilities to produce positive student outcomes.

A cross-sectional survey was selected as the design model because the characteristics of the study fit the description provided by Creswell (2012), in that a survey is used for "a sample of people to describe the attitudes, opinions, behaviors or characteristics of the population" (p. 376). Cross-sectional surveys are appropriate for educational settings where "data are collected at one point in time" (p. 377). This study used analysis of existing quality assurance data from the Teachers' Sense of Efficacy Scale (TSES) (Tschannen-Moran, & Woolfolk Hoy, 2001), a cross-sectional, quality assurance survey that was implemented by the school district to collect program evaluation data from teachers who completed the blended learning professional development program. An analysis of the quantitative TSES data was conducted to address Research Question 1 by measuring the level of self-efficacy of teachers to teach in a blended learning environment.

Participants

The population for the study was all secondary teachers in the United States. The learner characteristics of secondary teachers in the United States, according to the National Center for Educational Statistics (NCES, 2011-2012), are displayed in Table 5 below. The following demographic information was collected from the archival survey data for each participant at the end of the professional development: age, sex, race, education level, years of teaching experience, and grade level taught. As compared to the national population, the sample

participants included more females, greater diversity as represented by race, less years of

teaching experience, but similar levels of education (see Table 5).

Table 5

Characteristics of U.S. secondary teacher population and sample population

Characteristic	Population of US Secondary Teachers (N = 1,099,770)		Sample Participants (N = 19)	
	N	%	N	%
Sex				
Male	274,943	40.7	3	15.7
Female	824,827	59.3	16	84.3
Race				
White	923,807	83.5	11	58.0
Black	76,984	7.8	4	21.0
Hispanic	76,984	6.8	1	5.0
Other	21,995	1.9	3	16.0
Years of experience				
Less than 3 years	98,979	9.0	4	21.1
3-9 years	366,224	33.3	9	47.4
10-20 years	400,316	36.4	3	15.8
Over 20 years	234,251	21.3	3	15.8
Age				
20-30	190,260	17.3	3	16.0
30-50	541,087	49.2	6	58.0
Over 50	368,423	33.5	10	26.0
Education Level				
Less than Bachelor's	41,791	3.8	0	0.0
Bachelor's	438,808	39.9	8	42.1
Master's	524,590	47.7	11	57.9
Specialist	83,583	7.6	0	0.0
Doctorate	10,998	1.0	0	0.0

Source: NCES, (2011-2012)

The participants for blended learning professional development class were 20 secondary

teachers from an urban school district in the southern United States. The archival data was

obtained from 19 of the 20 participants. At the time of the study, there were a total of 296

secondary teachers employed by the district. The total enrollment for this school district was 8,576 students, with 4,419 of those students being enrolled in secondary schools. Nearly three-quarters (71%) of students in the district were classified as low income.

All of the teachers who participated in the professional development were licensed by the state and taught a variety of content areas within grades 6-12 and had the opportunity to attend technology professional development through the district, those questions were administered electronically via a Google Form. A link to the Form was sent to the teachers' school email. The direction of professional development for the school district gave permission for the use of the quality assurance data to analyze (See Appendix A).

All secondary teachers in the district were offered the opportunity to take the class, but the class was limited to 20 teachers. The selection process was based on interest in implementing blended learning in his/her classroom. Once a participant expressed interest, the instructor met in person with the potential participant to discuss the requirements of the class. If the potential participant was still interested in the class, he/she self-enrolled using the online information. One of the reasons the class was limited to 20 teachers was funding. Each participant received a piece of software to create digital content. The cost of the software was $150, and the district could only budget for 20 teachers. The other reason for the small sample size was the need to provide instruction to a small group. There was only one instructor for the professional development, and because of time constraints, only one class of 20 could be offered. The 20 participants elected to participate in the blended learning program during summer professional development as part of their hours required by the state. Of the 20 participants enrolled in the class, the hope was to have 100 percent participation in the quality assurance survey. Creswell (2012) recommends approximately 350 participants for a quantitative survey study, but stated there will be variations

depending on factors (p. 146). There are no rules for sample size in qualitative inquiry; the sample size depends on what the researcher want to learn from the study. The sample size may be a single case or a single site (Creswell, 2016; Patton, 1980). With 100 percent participation of the 20 participants, the feedback would be from multiple sources, which would assist in the improvement the program.

A personal one-to-one conversation was held with each participant about the process of the blended professional development process. The conversation included expectations of the participants including the face-to-face and online portions of the class. Once the information had been provided to the interested participants, they could make the decision if they want to sign up for the professional development. The participants were asked to complete a quality assurance survey after the professional development class ended. The archival data and a list of participants' email were requested from the director of professional development after IRB approval was obtained.

The study also involved interviewing five of the secondary teachers that participated in the professional development to collect data associated with Research Questions 2 and 3. Purposive sampling was used to identify potential interview participants. Purposive sampling is when certain participants are selected to understand a central phenomenon (Creswell, 2012). Homogeneous purposive sampling was appropriate for this study because it focused on candidates that shared similar traits, specifically secondary teachers who completed the "Blended Learning in the Secondary Classroom" professional development program, which may influence use of blended learning in their classroom. The method was random and did not need a set number of participants (Etikan, Musa, & Alkassim, 2016).

For the follow up interview portion of the study, an email (See Appendix B) was sent to eight of the 20 participants of the summer professional development session asking if they would be interested in participating in a 60 minute follow up interview. Of the eight participants that were sent the email, five agreed to participate in the interviews. The demographics of the five participants are described in Table 6.

Table 6

Demographics of the five participants

Characteristic	Sample Participants ($n = 5$)	
	n	*%*
Sex		
Male	1	20
Female	4	80
Race		
White	3	60
Black	2	40
Age		
20-30	3	60
31-40	0	0
41-50	1	20
Over 50	1	20

Setting

The school district where the professional development took place is in an urban city of 62,000 people in the southern United States. The school district has approximately 600 students per grade and has a free and reduced lunch rate above 70 percent. All buildings in the district have had an update to their technical infrastructure due to the recent state requirements of online testing. Since 2012, the district upgraded their bandwidth within each building and purchased thousands of Chromebooks, laptops, and iPads, making the secondary schools in the district 1:1.

Intervention

The intervention for this study was a blended learning environment. Blended learning is a formal education program in which students learn at least in part through online delivery 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 (Jobst, 2016). The training took place in two parts: a five-hour online training and a one-hour face-to-face training. The six-hour time period was selected for the training because the norm for training in the school district is six-hour blocks of time for one class. All participants received an email in their school email account before school was convened for the summer containing information on accessing the LMS (Google Classroom) for the blended learning professional development.

The blended learning professional development was broken down into three parts: one and a half hours online to be completed before the face-to-face meeting, one hour face-to-face meeting, and three and a half hours online after the face-to-face meeting. The online training was completed at the location of the participant's choice using a school laptop with Internet connection. Each participant was provided with a code that will allow access to the Google Classroom. All of the online content was be loaded into the Google Classroom prior to the training. The first online portion was distributed to participants on June 1st. This portion included reading two articles on blended learning and contributing to a group Google Slide presentation. All of the participants read one article that was a general explanation of blended learning and a second article was based on individual content areas. The instructor provided all articles. The participants added two slides to the group presentation. The first slide was a question or take away from the blended learning article that the entire group read. The second slide included a question or take away from the content specific article that the participant read. This portion can

be linked to Bandura's sources of efficacy-emotional arousal and vicarious experiences. Reading the articles describing other schools that have implemented blended learning may elicit emotional arousal and providing input to a group Google Slide presentation and read other participant's comments contribute to a vicarious experience (Bandura, 1977).

The one-hour face-to-face training was conducted on June 6th in the mini auditorium in the school district's middle school. The middle school mini auditorium had Internet access for the participants. This site was chosen for the training because of convenience, location, and functionality. The convenience factor is based on other summer trainings already being offered at the middle school. The location is centrally located to the participants of the study. The functionality of this location includes sound quality, easy viewing of instruction, and Internet quality. The auditorium has seats with fold out desks for the participants to place their laptops. Instruction was given from a stage with a projection screen and microphone. The instructor was able to leave the stage and walk around the learning area as needed to work with individual participants. The participants used their own school issued laptops for the training. Each participant had a copy of Camtasia® software installed on their school laptops for developing online content. Camtasia® is a video editing and screen recording software. The remainder of the one-hour face-to-face training included a discussion of the Google Slide shared presentation, including questions and comments on the blended learning instruction model. The elements of the training were supported by all four of Bandura's sources of self-efficacies. The nature of the activities, which included a group discussion, explanation of blended learning, participant installation of the software spans all four sources of performance: accomplishments, vicarious experience, verbal persuasion, and emotional arousal (Bandura, 1977).

The remaining online portion was three and a half hours spent creating a unit to be used in the participant's classroom using the blended instruction model. This portion of the professional development was tied to Bandura's performance accomplishments efficacy based on the final product the participants created, which reflected personal mastery experiences (Bandura, 1977). The expectation was that the remainder of the professional development would be completed by the end of August. The instructor provided several instructional videos, demonstrating how to use the Camtasia® software. The participants were required to turn in a lesson plan detailing their blended learning unit for their class as well as one instructional video created with the Camtasia® software. If a participant had a question, they received a timely answer from the instructor via email. A detailed list of activities may be found in Appendix C. Table 7 summarizes the workflow of the blended learning professional development as well as the crosswalk to Bandura's efficacy expectations.

Table 7

Blended Learning Professional Development Workflow

Setting	Duration	Activities	Bandura's efficacy expectation
Online June 1st-5th	1 ½ hours	• Read articles provided by instructor • Contribute to group Google Slide Presentation	• Emotional Arousal • Vicarious Experience
Face-to-Face June 6th	1 hour	• Install Camtasia® software through modeling and personal assistance if needed • Discussion of the group Google Slide presentation, including questions about the blended learning format	• Emotional Arousal • Vicarious Experience • Verbal Persuasion • Performance Accomplishment
Online Completed by end of August	3 ½ hours	• Create a lesson plan for a blended unit, indicate portions of the unit to be face-to-face and portions to be online • Create an instructional video with the Camtasia® software to be used in the online portion of the unit	• Performance Accomplishment

Participants received credit for the course in two parts. They received credit for reading the articles, contributing to the group Google Slide presentation, and attending the one-hour face-to-face training. The second part of the credit was given once the lesson plan and instructional video was turned in to the instructor via Google Classroom. The participants had approximately two months to complete the second part of the class.

Instructional Design of the Intervention

The instruction for the blended learning professional development (see Appendix C) was deployed via Google Classroom, a platform all participants had used. The instructor used Camtasia® software to create the instructional videos. Camtasia® is the same software the participants received and used in their instruction. Participants received instructional videos on how to use the Camtasia® software. Participants read the articles for the blended learning platform and were expected to participate in an educated group discussion during the one-hour face-to-face portion class. The assessment for the class was to develop a unit implementing blended learning based on the participant's content area that must include one instructional video. The content was placed in Google Classroom for the instructor to view and evaluate. The final project was due at the end of the summer professional development period, approximately two months after the professional development class was deployed. All participants were familiar with the Google Classroom learning management platform; so all instruction for the class was be deployed via Google Classroom.

<div align="center">

Instruments

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This study involved the use of existing quality assurance survey data collected with the Teachers' Sense of Efficacy Scale (TSES) (Tschannen-Moran & Woolfolk Hoy, 2001) and an interview protocol. Descriptions of each are below.

Quality Assurance Survey

The quality assurance survey data were collected with the Teachers' Sense of Efficacy Scale (TSES) (Tschannen-Moran & Woolfolk Hoy, 2001), which was administered by the school district for this study. The TSES was given to teachers who completed the "Blended Learning in the Secondary Classroom" professional development program. The survey was administered anonymously (no names were recorded) as a means to evaluate the quality of the professional development. The TSES survey included 24 9-pointLikert type scale items as well as four open-ended items and six demographic items added by the school district to better understand the effectiveness of the professional development (see Appendix D). The TSES instrument was based on Tschannen-Moran and Woolfolk Hoy's (2001) survey of teacher capabilities generated from Bandura's (1997) scale. In their research at Ohio State University, the TSES was tested in three separate studies, which resulted with a Cronbach at α value of .94 for the composite scale (Tschannen-Moran, & Woolfolk Hoy, 2001). The current study had a Cronbach at α value of .912 for the composite scale.

The TSES is an expanded list of teacher capabilities generated from Bandura's scale, which was a 30-item instrument with each item measured on a 9-point scale (1997). The instrument began with 52 items and was tested in three separate studies. To determine which factors should be retained, a *scree test* suggested the three factors (efficacy for student engagement, efficacy for instructional strategies, and efficacy for classroom management) should be retained, resulting in the 24-item questionnaire. Using the selected 24 items, principal-axis factoring with *VARIMAX rotation* yielded the same results (Tschannen-Moran, & Woolfolk Hoy, 2001). The recommended scoring guide is provided by the creators of the instrument as well as which questions coincide with each of the three factors as shown in Table 8 below. The scores

are calculated using unweighted means and standard deviations. The lowest score is a one,

meaning the teacher had a low sense of self-efficacy for that item and a nine represents a high

level of self-efficacy for an item. The data can be analyzed for each of the 24 items, the three

subscales, and an overall composite for all 24 questions. The instrument is located in Appendix

D and the letter allowing use for research provided by Dr. Woolfolk Hoy may be found in

Appendix E. The 24-question instrument data was analyzed to answer **Research Question 1**:

What is the level of self-efficacy to teach in a blended environment for secondary teachers after

receiving blended professional development?

Table 8

TSES Items by Efficacy Factors

Efficacy Factor	Items by Efficacy Factor
Efficacy in Student Engagement	1. How much can you do to get through to the most difficult students?
	2. How much can you do to help your students think critically?
	4. How much can you do to motivate students who show low interest in schoolwork?
	6. How much can you do to get students to believe they can do well in schoolwork?
	9. How much can you do to help your students value learning?
	12. How much can you do to foster student creativity?
	14. How much can you do to improve the understanding of a student who is failing?
	22. How much can you assist families in helping their children do well in school?
Efficacy in Instructional Strategies	7. How well can you respond to difficult questions from your students?
	10. How much can you gauge student comprehension of what you have taught?
	11. To what extent can you craft good questions for your students?
	17.How much can you do to adjust your lessons to the proper level for individual students?
	18. How much can you use a variety of assessment strategies?
	20. To what extent can you provide an alternative explanation or example when students are confused?
	23. How well can you implement alternative strategies in your classroom?
	24. How well can you provide appropriate challenges for very capable students?
Efficacy in Classroom Management	3. How much can you do to control the disruptive behavior in the classroom?
	5. To what extent can you make your expectations clear about student behavior?
	8. How well can you establish routines to keep activities running smoothly?
	13. How much can you to get children to follow classroom rules?
	15. How much can you to calm a student who is disruptive of noisy?
	16. How well can you establish a classroom management system with each group of students?
	19. How well can you keep a few problem students from ruining an entire lesson?
	21. How well can you respond to defiant students?

Source**:** Tschannen-Moran, & Woolfolk Hoy (2001)

The four open-ended questions were designed to further understand the quantitative data. These items were: "What component of the blended learning professional development contributed the most to your level of self-efficacy?" Why was that component most beneficial?" "Which area of blended learning professional development could be improved?" and "What topics in the blended learning professional development should receive more emphasis?" Responses to these questions were used to address research questions two and three.

Research Question 2. What component of the blended learning professional development assisted teachers in improving their level of self-efficacy?

Research Question 3. How can the blended professional development be improved to assist teachers in improving their level of self-efficacy?

Interview Protocol: The semi-structured interview protocol consists of two main interview questions (see Appendix F). The first interview question specifically addresses Research Question 2 by asking participating teachers to "describe in what ways the professional development was the most helpful." This interview question has two follow-up questions to further explore details of how the professional development best prepared them to implement blended learning and why these methods were considered as most helpful. The second interview question addresses Research Question 3 by soliciting participant perceptions of how the professional development could be improved. Four follow up questions asked participants to describe recommended changes, specific barriers and ways to minimize them, and how their self-efficacy may have been improved if these issues had been addressed.

The instrument was sent to the participants after the professional development session via a link to a Google Form in their school email. The 24 questions were constructed in a Google Form as a Likert style survey and the open-ended questions were included at the end, and

participants may type their responses. There were six demographic questions at the beginning of the survey to gather data on gender, race, age, teacher experience, grade level taught, and level of education of the participants.

Interview

It was decided that interviewing some of the participants after they had time to implement blended learning would further strengthen the findings of the quality assurance data. Approximately 12 weeks after the professional development had ended, eight of the twenty participants were selected through random sampling using an array formula in Google Sheets. Of the eight that were sent an email invitation, five of the participants agreed to participate in 60-minute interviews. The interview protocol may be found in Appendix F and the consent form provided to the participants may be found in Appendix G. The interviews took place in a time and location that was convenient to the participants. The interview was recorded on an iPad using a voice recorder app. The interviews were transcribed and then coded to discover emerging themes (Creswell, 2014).

Data Collection/ Procedures

I successfully completed the mandatory Collaborative Institutional Training Initiative training as mandated by the University's IRB doctoral program. Upon obtaining approval for the study from the department, I took the steps to gain IRB approval (See Appendix H). Procedures for collecting the quality assurance data and for conducing the interviews are below.

Quality Assurance Survey Procedures

After receiving IRB approval, the quality assurance TSES data were obtained from the Director of Professional Development from the school district. The letter giving permission to

use the data and the email requesting the data may be found in Appendices A and I. Details of how the school district collected the quality assurance data were as follows.

District collection of TSES data. Since the professional development was required for those implementing blended learning, the recruitment process for getting participants for the study was done by sending the teachers information about signing up for the professional development session. The first 20 secondary teachers who were interested in participating in the professional development were notified personally that they were eligible to participate in the professional development program. Teachers completed the professional development over the summer break, giving them 10 weeks to complete the course. The TSES quality assurance survey was administered at the end of training via a Google Form link sent to the participants' school email. The survey was sent to the 20 participants in mid-September, with a request to complete the survey by the end of September, which resulted in the district receiving a total of 19 completed surveys. This method was selected because the participants were familiar with completing surveys created in Google Forms and the collected data were easy to read and transfer to a Google Sheet, which made tabulation efficient. The TSES instrument was appropriate to use with teachers because the prior research studies used to validate this instrument were done with teachers through the college of education. Additionally, the TSES is a survey specifically created to access teacher self-efficacy. An initial email was sent to participants, and a follow up email was sent to participants as a reminder for those who did not respond to the first email.

Interview Procedures

After IRB approval was obtained, purposive sampling was used to select eight secondary teachers that participated in the "Blended Learning in the Secondary Classroom" professional

development program to participate in an interview (Etikan et al., 2016). The selection process involved numbering teachers in alpha order, then using an array formula to select the eight participants to receive the interview invitation. The goal was to have from three to eight interview participants. Five of the eight teachers agreed to participate in the interview. The interviews occurred approximately 12 weeks after teachers completed the professional development program. Email invitations (Appendix B) were sent to potential participants who met the purposive sampling criteria of having participated in the blended learning professional development provided by the school district. For those who agreed to participate, email was used to set a time and location for a face-to-face, one-on-one interview. At the start of the meeting, participants were provided a copy of the Consent Form (Appendix G) to review, ask questions, and sign, if they agreed to participate. Once the consent form was signed, the researcher followed the Interview Protocol to conduct the interview, which was audio recorded with an iPad and lasted no more than 60 minutes. Participant names were not recorded. The recordings were uploaded and stored in a password-protected account. The recordings were deleted from the account after the study was completed. Interviews were transcribed for coding. The transcriptions were stored in a locked file cabinet in the researcher's office.

Data Analysis

Data analysis is described for data collected with the TSES survey and data collected with the interview protocol. Also discussed is the use of methods triangulation to compare the quantitative and qualitative data and more fully explore the phenomenon of this investigation.

TSES Data Analysis

All quantitative data collected on each of the 24 items in the TSES instrument went directly into a Google Sheet. The data were then imported to IBM SPSS Statistic 24 software to

calculate the mean and standard deviation for each item and the subgroups comprising the three self-efficacy factors.

In addition to the quantitative analysis, the four open-ended questions of the TSES were analyzed using a descriptive process. Specifically, participant responses to the open-ended questions were imported into a spreadsheet. Each response was analyzed and key words color-coded to discover similarities across responses and identify emerging themes. Descriptive statistics were used to report identified themes that support quantitative data.

Interview Data Analysis

Analysis for the open-ended items on the interview protocol was based on an emergent design. As the data were collected, the research plan had fluidity in order to learn more about the research questions from the participants (Creswell, 2014). Patton (1980) suggests that qualitative research design "remain sufficiently open and flexible to permit exploration" and "be emergent even after data collection begins" (p.196). The researcher used both a traditional research process while also becoming an explorer who used new research techniques (Hesse-Biber & Leavy, 2008). Emergent design is appropriate when studying a real world problem. The study may move in a different direction once data is collected and the data will drive the design of the study (Wright, 2009).

A coding process was used to link the data with an idea, the primary goal being to find repetitive patterns and consistencies. Groups of data were put together because of a commonality, not because of being exact replicas of each of other (Saldana, 2009). Following procedures prescribed by Miles and Huberman (1994), first level coding was used to determine themes that were reoccurring. Single codes were used for segments of data, using multiple codes when warranted. Pattern codes were used to group together the first level coding to determine

themes. Pattern coding is important to "get the researcher into data analysis during collection and to reduce larger amounts of data into smaller units for analysis" (Miles & Huberman, 1994, p. 69).

Triangulation

Both quantitative and qualitative methods were used in this study, therefore methods triangulation was employed. Patton (1999) notes that methods triangulation involves the comparison of data collected through qualitative methods with data collected through quantitative methods, and that these data "can be fruitfully combined when they elucidate complementary aspects of the same phenomenon" (p. 1194). Denzin (1978) and Patton both note that methods triangulation enables the researcher to note how data are similar and how they diverge, providing with greater insights into findings and implications.

Methods triangulation was used in this study because both qualitative and quantitative data were used to get a richer overall impression of the effectiveness of professional development (Patton, 1980). Findings from the qualitative data were compared with those from the quantitative data to gain insights beyond the provided by the TSES survey (Hesse-Biber & Leavy, 2008).

<center>**Delimitations, Limitations and Ethical Issues**</center>

The delimitations, limitations, and ethical issues to consider in association with the study are described below.

Delimitations

The present study had delimitations decided on by the researcher. The geographical boundaries exist within the school district of the study. This decision was made because of timing of the study and the consistency of the training provided to the participants. The feedback

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sought was for a particular training. If a wide sample size was selected from different areas of the state or the country for that matter, the training provided to participants may not have been the same as the participants in the current study; therefore the training program could not have been effectively evaluated. The data in the self-efficacy survey were self-reported and relied upon a teacher's opinion rather than an outsider's observation. This decision was made so not to involve other people outside of the researcher and participants in this study. Since the researcher does not have administrative authority over the teachers, a classroom observation and evaluation of the teachers blended learning implementation would have to involve someone in an administrative position.

Limitations

The present study had several limitations. There was no random selection of participants. The participants were selected because they were enrolled in the professional development class. The geographical area for the study was limited to one school district in one area of a small state. The study would have benefited from a wider geographical area, such as opening the class to all secondary teachers in the state. The two weaknesses listed would have been difficult to control in the present study. Gathering teachers from around the state would be a challenge because many districts prescribe the professional development they want their teachers to participate, so it would be complicated to gather teachers from other districts. The randomization would also be difficult to control since the study needed to be small based on the software the teachers received and only one instructor was available to teach the class. The small sample of teachers was for a very specific content and not intended to be generalized on a large scale.

The teachers did receive the Camtasia® software for participating in the study, which could be considered an incentive. I do not think it affected anyone's decision to participate in the

in the study for two reasons. One, the participants did not know they were receiving the software until they arrived for the face-to-face training. Two, the software belongs to the school district, so the participants may use the software as long as they are employed with the district. Once the teacher leaves the district, they will no longer have access to the software.

The survey that provided data for analysis was distributed to participants via their school email account. The participants were able to answer the survey anonymously. The participants needed to feel that they could be completely honest about the training they received, so they were given the opportunity to respond without revealing their identity. For result reporting purposes, the participants were each assigned a participant number. The self- reporting of data can be considered a weakness due to the fact that no classroom evaluations were done to observe the implementation of blended learning.

Ethical Issues

My relationship with the participants is a collegial working relationship. I have been working for the school district for 18 years; therefore I have known some of the participants for the duration. The majority of the participants I have known since I began my current job six years ago, depending on how long the participants have been in the district. I am a support system for the teachers and provide them with assistance in the integration of technology in their classroom.

CHAPTER FOUR: RESULTS

Introduction

The purpose of this cross-sectional survey study was to examine the level of self-efficacy of secondary teachers at an urban secondary public school district to teach in a blended learning environment after receiving blended learning professional development. The results of the study are presented in this chapter beginning with quantitative results of the quality assurance survey data collected with the Teachers' Sense of Efficacy Scale (TSES) (Tschannen-Moran & Woolfolk Hoy, 2001), followed by emerging themes from the TSES open-ended items, concluding with outcomes from the follow-up interviews with five of the participants.

TSES Survey Results

Results of the descriptive statistics culminating from the 24-question TSES quality assurance survey, address **Research Question 1**: *What is the level of self-efficacy to teach in a blended learning environment for secondary teachers after receiving blended learning professional development?* At the conclusion of the professional development, 19 participants completed the TSES as quality assurance survey, basing their answers on their experience in the professional development session. The results of the 24-question Likert style survey, with one being low and nine being high were imported from a Google Sheet to the IBM SPSS Statistic 24 software. The software ran descriptive statistics for central tendency and variation. The means and standard deviations for each of the 24 items, for the overall survey, the self-efficacy factors, and the four open-ended items are reported.

Overall TSES Results

The overall TSES participant responses by item scale are located in Appendix J. The overall mean was 7.59 and the overall standard deviation was .623. The level of self-efficacy

across the 24 items had a 1.37 difference between the item with the lowest *mean* score ($M =$ 6.89) and the item with the highest *mean* score ($M = 8.26$), noting the range of the scores was from one to nine. The two questions with the highest mean were, "To what extent can you make your expectations clear about student behavior?" ($SD = .733$; $M = 8.26$) and, "How well can you establish routines to keep activities running smoothly?" ($SD = .653$; $M = 8.26$). The three questions with the lowest mean were as follows: "How much can you do to motivate students who show low interest in schoolwork?" ($SD = 1.100$; $M = 6.89$); "How much can you assist families in helping they children do well in school?" ($SD = 1.508$; $M = 7.05$); and "How much can you do to improve the understanding of a student who is failing?" ($SD = 1.129$; $M = 7.05$).

TSES Self-Efficacy Factors

The TSES quantitative data were also analyzed the three subscale factors: efficacy for student engagement, efficacy for instructional strategies, and efficacy for classroom management. Table 9 presents the mean and standard deviation for the three subscale factors and the corresponding eight items for each factor. The subscale factor with the highest *mean*, was instructional strategies ($M = 7.76$), followed by classroom management ($M = 7.68$), then student engagement with the lowest mean ($M = 7.36$)

Table 9

Factors Standard Deviation and Mean Scores

Efficacy in Student Engagement Items	SD	M
1. How much can you do to get through to the most difficult students?	1.302	7.16
2. How much can you do to help your students think critically?	1.116	7.63
4. How much can you do to motivate students who show low interest in schoolwork?	1.100	6.89
6. How much can you do to get students to believe they can do well in schoolwork?	1.015	7.84
9. How much can you do to help your students value learning?	1.416	7.32
12. How much can you do to foster student creativity?	.911	7.95
14. How much can you do to improve the understanding of a student who is failing?	1.129	7.05
22. How much can you assist families in helping their children do well in school?	1.508	7.05
Factor *Standard Deviation* and *Mean* Score	.797	7.36
Efficacy in Instructional Strategies Items	**SD**	**M**
7. How well can you respond to difficult questions from your students?	.848	8.05
10. How much can you gauge student comprehension of what you have taught?	.769	7.58
11. To what extent can you craft good questions for your students?	.749	7.68
17.How much can you do to adjust your lessons to the proper level for individual students?	1.073	7.53
18. How much can you use a variety of assessment strategies?	.918	7.79
20. To what extent can you provide an alternative explanation or example when students are confused?	.631	8.21
23. How well can you implement alternative strategies in your classroom?	.905	7.47
24. How well can you provide appropriate challenges for very capable students?	.713	7.79
Factor *Standard Deviation* and *Mean* Score	.579	7.76
Efficacy in Classroom Management Items	**SD**	**M**
3. How much can you do to control the disruptive behavior in the classroom?	1.342	7.37
5. To what extent can you make your expectations clear about student behavior?	.733	8.26
8. How well can you establish routines to keep activities running smoothly?	.653	8.26
13. How much can you to get children to follow classroom rules?	1.204	7.32
15. How much can you to calm a student who is disruptive of noisy?	1.300	7.37
16. How well can you establish a classroom management system with each group of students?	.895	7.63
19. How well can you keep a few problem students from ruining an entire lesson?	1.071	7.42
21. How well can you respond to defiant students?	1.116	7.63
Factor *Standard Deviation* and *Mean* Score	.767	7.68

* Scale: 1 = Nothing; 9 = A Great Deal

The emerging theme from this angle of the data shows that again, teachers showed more self-efficacy in areas that they could control, which were instructional strategies and classroom management. The teachers demonstrated lower self-efficacy in student engagement, which

although teachers may be able to influence, the students themselves are the determining factor rather than the teacher.

TSES Open-Ended Responses

To address Research Questions 2 and 3 that deal with improving the professional development to increase the self-efficacy of the teachers, the quality assurance survey asked four opened ended questions. The interview data discusses later in the chapter will also show data to address these two questions. Table 10 lists the four questions that were asked at the end of the TSES quality assurance survey. Subsequent tables address each question with responses from the 19 teachers. The teachers' answers were coded based on themes present in the responses. If a teacher's response contained more than one theme, then the response was coded for each theme. The subsequent tables show more than 19 responses based on the number of themes present in teachers' responses.

Table 10

Quality assurance open-ended questions

Questions
• What component of the blended professional development contributed the most to your level of self-efficacy?
• Why was that component most beneficial?
• Which area of blended professional development could be improved?
• What topics in blended professional development should receive more emphasis?

What component of the blended professional development contributed the most to your level of self-efficacy? Participants were asked, "What component of the blended learning professional development contributed most to the level of self-efficacy" as a way to examine the effectiveness of the professional development. Each of the 19 participants submitted a response

to this item. Analysis of the responses yielded four key themes that emerged from the

participants' answers (see Table 11). The four most commonly used themes contributing to the

self-efficacy of the teachers were, 1) instruction on the Camtasia® software (50%), 2) meeting

the needs of all students (18%), 3) creating lesson plans (14%), and 4) assigned articles (9%),

which account for 90% of all responses. An example response from each of these themes is

included below:

- Camtasia® software: "Being able to put a voice to my notes"
- Meeting the needs of all students: "Simply not being tied to giving the lesson and allowing technology to take some of the workload allows me to assist students of every level as needed."
- Creating lesson plans: "working independently toward creating a blended learning lesson was most beneficial."
- Assigned articles: "assigned article on personalized learning/blended learning"

Table 11

What component of the blended professional development contributed the most to your level of self-efficacy?

Response theme	Number of responses	Percent of total responses
Camtasia® software	11	50%
Meeting the needs of all students	4	18%
Creating lesson plans	3	14%
Assigned articles	2	9%
Miscellaneous responses	2	9%
Total responses*	22	

Sample Responses
- Camtasia® software: "Being able to put a voice to my notes"
- Meeting the needs of all students: "Simply not being tied to giving the lesson and allowing technology to take some of the workload allows me to assist students of every level as needed."
- Creating lesson plans: "working independently toward creating a blended learning lesson was most beneficial."
- Assigned articles: "assigned article reads on personalized learning/blended learning"

*Total by number of responses per participant: Single response theme =16; two themes = 3; three themes = 0; four themes = 0; No response =0.

Why was that component most beneficial? When participants were asked why the

component mentioned in Question one was most beneficial, 18 of the 19 participants responded

to this item. Analysis of the responses yielded four themes that emerged from the participants'

answers (see Table 12). The four most commonly used themes as to why the component was

most beneficial were 1) being able to individualize based on student needs (33%), 2) approach to

lesson plans (28%), 3) teacher confidence (27%), and 4) teacher reflection (17%), which account

for 95% of all responses. An example response from each of these themes in included below:

- Individualize based on student needs: "It doesn't put pressure on the student to keep up with everyone."

- Approach to lesson plans: "It provided an alternative method for introducing, reinforcing or demonstrating new material in a way that students relate to."

- Teacher confidence: "I was not comfortable making the video. Once I made one my confidence level went up regarding making future videos."

- Teacher reflection: "Learning how to use Camtasia® allowed me to critique myself; therefore I could reflect more meaningfully."

Table 12

Why was that component most beneficial?

Response theme	Number of responses	Percent of total responses
Individualize based on student needs	6	33%
Approach to lesson plans	5	28%
Teacher confidence	3	17%
Teacher reflection	3	17%
Miscellaneous responses	1	05%
Total responses*	18	

Sample Responses

- Camtasia® software: "Being able to put a voice to my notes"

- Meeting the needs of all students: "Simply not being tied to giving the lesson and allowing technology to take some of the workload allows me to assist students of every level as needed."

- Creating lesson plans: "working independently toward creating a blended learning lesson was most beneficial."

- Assigned articles: "assigned article reads on personalized learning/blended learning"

*Total by number of responses per participant: Single response theme =18; two themes = 0; three themes = 0; four themes = 0; No response =1;

Which area of blended professional development could be improved? Participants were asked in question three "which area of the blended learning professional development could be improved". All 19 of the participants provided some form of a response to this question. Analysis of the responses yielded four minor themes that emerged from the participants' answers (see Table 13). The majority of the participants offered no improvements to the program (52%). The minor themes that developed were 1) more face-to-face time (14%), 2) student learning (14%), 3) provide samples (9.5%) and 4) stations working in the classroom (9.5%). An example response from each of these themes in included below:

- More face-to-face time: "I would have liked to meet again one more time after completing the work to reflect and make plans for moving forward with other teachers."

- Student learning: "how to differentiate to the different learners"

- Provide samples: "If possible, provide a sample video of a teacher teaching a blended learning lesson, activity, or assessment."

- Stations working in the classroom: "The one using the stations in the classroom."

These results show that most of the participants had no further suggestions for the professional development program. The participants who did have suggestions proposed more face-to-face time, how students learn, providing more samples, and showing how stations work in the classroom.

Table 13

Which area of blended professional development could be improved?

Response theme	Number of responses	Percent of total responses
No improvement	11	52%
More face-to-face time	3	14%
Student learning	3	14%
Provide samples	2	9.5%
Stations working in the classroom	2	9.5%
Total responses*	21	

Sample Responses

- More face-to-face time: "I would have liked to meet again one more time after completing the work to reflect and make plans for moving forward with other teachers."
- Student learning: "how to differentiate to the different learners"
- Provide samples: "If possible, provide a sample video of a teacher teaching a blended learning lesson, activity, or assessment."
- Stations working in the classroom: "The one using the stations in the classroom."

*Total by number of responses per participant: Single response theme =17; two themes = 0; three themes = 1; four themes = 0; No response =1;

What topics in blended professional development should receive more emphasis?

When asked, "What topics in blended professional development should receive more emphasis?"

17 of the 19 participants submitted a response to this item. Analysis of the responses yielded

four themes that emerged from the participants' answers (see Table 14). The four most common

themes of topics to receive more emphasis in the professional development training were 1)

instruction on the differentiating/individualizing of content (20%), 2) types of blended learning

(20%), 3) Camtasia® software (10%), and 4) instruction (10%), which account for 60% of all

responses. An example response from each of these themes in included below:

- Differentiating/individualizing: "the freedom to individualize as needed by unshackling

    the educator from traditional teaching constraints."

- Types of blended learning: "what types of blended learning are most effective and appropriate for students at the specific age and developmental levels of our school."

- Camtasia® software: "More practice with the Camtasia software"

- Instruction: How do we see that students are able to access the Internet outside of the classroom?"

The results show that most participants have components that they would have like to receive more emphasis in the blended learning professional development training, specifically, how to differentiate and individualize lessons for students, they different types of blended learning, the Camtasia® software, and instruction.

Table 14

What topics in blended professional development should receive more emphasis?

Response theme	Number of responses	Percent of total responses
Differentiating/individualizing	4	20%
Types of blended learning	4	20%
Camtasia® software	2	10%
Instruction	2	10%
Miscellaneous responses	8	40%
Total responses*	20	

Sample Responses
- Differentiating/individualizing: "the freedom to individualize as needed by unshackling the educator from traditional teaching constraints."
- Types of blended learning: "what types of blended learning are most effective and appropriate for students at the specific age and developmental levels of our school."
- Camtasia® software: "More practice with the Camtasia® software"
- Instruction: How do we see that students are able to access the Internet outside of the classroom?"

*Total by number of responses per participant: Single response theme =18; two themes = 1; three themes = 0; four themes = 0; No response =2.

Interview Results

As stated previously, eight of the professional development participants were randomly selected for the interview process. Five of those eight participants agreed to participate in the interview process. The semi-structured interview consisted of two main interview questions with follow-up questions for each question (see Appendix F) associated with Research Questions 2 and 3. Using emerging research, there was one major theme that existed coupled with several minor themes.

Research Question 2: What component of the blended learning professional development contributed most to teacher's level of self-efficacy?

To assist in answering Research Question 2, the participants were asked about the component of the professional development that best helped them prepare for the blended learning implementation process. Specifically, when participants were asked, "Now that you have had a few months to implement blended learning, please describe in what ways the professional development was the most helpful?" the key theme that emerged was that of personalization. All five participants stated that learning about personalization of instruction was beneficial. Branching out from the central theme of personalization, were learning to use the Camtasia® software and the articles provided by the instructor. Two of the five participants stated that Camtasia® was the most beneficial component, while two others stated that reading articles about the blended learning process was most beneficial. One of the participants who stated that Camtasia® was most beneficial commented that he liked it because he was able to "tailor videos specifically towards the students and their needs" and that being able to make your own videos gives him "an advantage because you get all the benefits without any downsides, because I am making (the videos) myself." One of the participants stated that reading the articles

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was most beneficial because she liked the information provided in the articles about the different types of blended learning models. She told me that the articles exposed her to "personalized instruction" and how to use blended learning as a "second teacher" in the classroom.

Research Question 3: How can the blended learning professional development be improved to assist teachers in improving their level of self-efficacy?

Three key themes emerged in relation to Research Question 3: 1) more face-to-face interaction, 2) more resource sharing between teachers, and 3) providing more examples of blended learning. Three of the teachers reported that they would have like to have had another meeting at the end of the summer before their final product was due. Their main reason was to ask more questions after they had worked independently, specifically about the Camtasia® software. One teacher found herself struggling with processing the video and sharing the video once completed. This made her confidence level lower with the implementation process. She said she would have "absolutely rated myself higher" on the self-efficacy survey if she could have had her questions answered before the project was due. Two of the teachers stated they would have liked more resource sharing between participants. One mentioned that she would have liked more "collaboration between the teachers" while the other stated she would have liked a "thread in the Google Classroom for teachers as a reflective piece to tell what method they were using, what was working, and what did not work." The last theme that emerged was teachers wanted more examples of blended learning. Four of the teachers brought up the topic of needing more examples of blended learning to assist with the implementation process. One participant said they she would have liked to see a "mini demonstration of the different strategies," while another wanted more information about the implementation process in her specific subject area.

Additional Themes

Two other themes emerged from the interview process that were not necessarily connected to a specific research question, but one provides impetus for future research and the other lent further insight into the qualitative data. One emergent theme that was prevalent in the interview process that will assist in future research was the digital divide. As mentioned earlier in this manuscript, the digital divide is often a barrier to the blended learning implementation process. Two of the interviewed teachers mentioned that a hindrance to the implementation process was students not having access to technology outside of school, specifically the Internet. One stated that he did not "want to give an assignment when a kid is absent and they can only make it up here (at school)" due to the lack of access to technology at home. One participant did have an alternative response regarding the digital divide, stating that if students did not have access to a laptop, there were "a lot of things they could do on their phone."

The other emergent theme that led to insight of the qualitative data results dealt with items with a high level of self-efficacy in classroom management and lesson planning and the low self-efficacy of student motivation and family involvement. Two of the teachers provided reason for the results, both revolving around the age of students and insufficient teacher training. One stated that the lack of student motivation is difficult to change once a student is in high school. "Motivation is built up over life, and when a kid comes to you at 16 years old, motivation has been worked on for 16 years" and it is "hard in high school to change that." The other mentioned the lack of control teachers have over student motivation and family involvement and the fact that teacher do have control over classroom management and lesson planning. Both teachers revealed a somewhat surprising reason for the results, and they both stated that college classes and previous professional development focused heavily on lesson planning and

classroom management, but rarely does any training focus on how to get students motivated and families involved.

Summary

In summary, 20 secondary teachers participated in a summer professional development to prepare for the blended learning implementation process. Of the 20 teachers who participated in the professional development, 19 completed a quality assurance survey to measure their level of self-efficacy after completing the training. Descriptive statistics were used to calculate means and standard deviation for each of the 24 indicators on the survey. A categorizing process was used to determine the themes from the open-ended questions on the survey. For the interview section of the study, eight of the 20 teachers were randomly selected to participate in a follow-up interview, five of the eight elected to participate in the interview. Coding was used with the five interview transcripts to determine the emerging themes from the interviews. Methods triangulation was applied by using results from the quantitative survey data and interview data to assist in understanding the results from the qualitative survey data. Chapter five will discuss the results of this chapter along with implications for future studies and recommendations for next steps for the school district in this study.

CHAPTER FIVE: DISCUSSION AND CONCLUSIONS

Discussion

The purpose of this cross-sectional survey study was to examine the level of self-efficacy of 19 secondary teachers at an urban secondary public school district to teach in a blended learning environment after receiving blended learning professional development. Nineteen teachers who participated in the blended learning professional development, completed quality assurance surveys at the end of the class and eight of the 19 participants were randomly selected for a follow-up interview with five agreeing to participate. The survey used to gather quality assurance was the TSES (Tschannen-Moran, & Woolfolk Hoy, 2001) and the 24 Likert scale items were analyzed using descriptive statistics and emergent design was used to analyze the open-ended questions and interview responses. This chapter will discuss results in relation to the three research questions as aligned with current literature, and explore next steps for future training in this school district and secondary education as a whole. Also presented are recommendations for future studies.

Research Question 1

What is the level of self-efficacy to teach in a blended learning environment for secondary teachers after receiving blended learning professional development?

The primary purpose of Research Question 1 was to determine secondary teacher's level of self-efficacy to teach in a blended learning environment after completing six hours of blended learning professional development. The TSES data provided results for teacher's overall level of self-efficacy as well as the construct of self-efficacy regarding the factors of student engagement, instructional strategies, and classroom management (Tschannen-Moran & Woolfolk Hoy, 2001). Outcomes for these factors are discussed below.

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Overall Teacher Self-Efficacy

The overall level of teacher self-efficacy reported by teachers in this 7.59. The teacher

ratings on the 24 items ranged from a low *mean* score of 6.89 to a high of 8.26, with a score of 9

representing "A Great Deal" of self-efficacy regarding the listed tasks. These findings were

similar to those of Ross (1994) whose survey results from 50 secondary teachers revealed the use

of in-service knowledge contributes to the change in general teacher efficacy. However, in

contrast TSES findings from teachers in a study conducted by Tschannen-Moran, Woolfolk Hoy

and Hoy (1998), revealed teacher's self-efficacy can be lower with the implementation of a new

method.

Bandura (1977) suggested self-efficacy could be influenced by four factors: a person's

performance accomplishment, vicarious experiences, verbal persuasion, and emotional arousal.

The findings of this study may have been influenced by performance accomplishment of the

teachers due to the teacher professional development experience (Dabner, Davis, & Zaka, 2013).

For example, a study by Woolfolk and Hoy (2007) using the TSES instrument revealed that

career teachers rated themselves higher in self-efficacy overall and in two of the three subscales.

Additionally, a study by Kearns (2015) with 59 participants used the TSES instrument as well

and reported significant differences between career and novice teachers with career teachers

posting a higher overall mean of self-efficacy.

Self-Efficacy Regarding Student Engagement

The self-efficacy for student engagement had an overall *mean* score of 7.36, which was

the lowest of all three factors. This factor being the lowest is consistent with several other studies

using the same TSES instrument (Kerns, 2015; Shane, 2010). These same studies are in

agreement with the current study in regards to the lowest two items pertaining to the student

engagement subscale, which were *How much can you do to motivate student who show low interest in school work* and *How much can you assist families in helping their children do well in school?* There was no direct information provided in the professional development that included any instruction on student engagement, so it is not surprising that teachers rated themselves lower in this area. These results were reinforced during the teacher interviews by use of methods triangulation. The teachers stated that they received little to no training in the areas rated lower in the quantitative data. The results are in alignment with Bandura's (1977) research with self-efficacy stating that if information in professional development does not build confidence, then classroom behavior will not be changed. A study by Ford (2012) with 120 participants concluded that high school teachers do not feel as empowered to motivate students based on the student's age once the teacher receives them. These results were reinforced with discoveries during the teacher interviews when one teacher stated that, "by the time students reach the secondary level, it is difficult to change motivation habits." This could be a reflection of teachers not being as confident in things they cannot control, such as student motivation. For example, a teacher remarked in his interview, "…most professional development revolved around things like lesson planning and classroom management, and rarely was student motivation a topic."

Self-Efficacy Regarding Instructional Strategies

Teacher's mean score on the instructional strategies factor was 7.76, which was the highest of the three factors. The professional development completed by the participants required the teachers to construct a blended learning lesson plan that incorporated an instructional video. The teachers were provided with specific instructions accomplish these tasks that they were able to implement immediately (Yoo, 2016). When professional development is effective, teachers are provided with new skills, resources and knowledge to implement in their classroom and

when self-efficacy is high teachers are more willing to try a new technique (Sugar & Slagter von Tryon, 2014; Wolters & Daugherty, 2007). The high mean for instructional strategies could be attributed to Bandura's (1997) performance accomplishment, which is considered a driving factor in the level of teacher efficacy to implement a new instructional model.

Self-Efficacy Regarding Classroom Management

The self-efficacy for classroom management had an overall *mean* score of 7.68, which was in the middle of the three factors. The majority of the teachers in the current study (84%) were over the age of 30, which may have influenced the high self-efficacy scores in classroom management. Knowles' (1988) assumptions of adult learners, suggest adult learners gain resources as they mature. Younger teachers tend to struggle with classroom management as shown in a study of 141 secondary teachers that concluded classroom management was a static problem for novice teachers (Hicks, 2012). An interview comment from one of the younger teachers in the study reflected this concern, in that he "was surprised the classroom management score was so high, because that was an area where he struggled." In contrast a study done by Shaukat and Iqbal (2015) with 208 participants and using the same TSES instrument, showed that younger teachers ages 21-30 were likely to manage classrooms better than older teachers. This study revealed a similar outcome in an interview with an under 30 teacher who expressed that her efficacy for classroom management "…increases throughout the year once she has had time to establish a personal connection with the students."

Another possible reason for a high self-efficacy mean for classroom management is the control factor. Teacher's efficacy can be related to a teacher's classroom management and their ability to control activities in their classroom (Woolfolk et al., 1990). Kronholz (2011) found that teachers were able to control the learning path of students by using a blended learning model that

allowed students to constantly work rather than wait on other students before moving to a new topic.

In summary, the quality assurance data coupled with supporting data from the qualitative interviews showed that teachers deemed themselves rather high on the self-efficacy scale after receiving professional development. The factor of instructional strategy received the highest efficacy scores, which can be attributed to the required activities of the professional development. The factor with the lowest mean score, student engagement, did not have any components directly related to the professional development program.

Research Question 2

What component of the blended learning professional development contributed most to teacher's level of self-efficacy?

The blended learning professional development for this study was designed, as previous research had suggested, to have teachers experience a student-centered environment to enhance implementation of blended learning in their classroom and involved teachers using the same technology that students would use in a blended lesson (Duhaney, 2012; Kassner, 2013; Watson, 2008). Research Question 2 was designed to determine which component of this professional development contributed most to the teacher's level of self-efficacy. The open-ended questions and teacher follow-up interviews were used to answer Research Question 2. Three key components of the professional development emerged from these data sources: 1) learning how to individualize instruction, and 2) learning from articles, and 3) learning from hands-on lesson development.

Individualizing Instruction

The overarching theme that resulted from the open-ended and interview questions was meeting the needs of all students through the individualization of a lesson. The teachers liked the Camtasia® software for video creation because they can use it to create videos for personalized instruction. Since self-efficacy is aligned with student achievement (Tschannen-Moran et al., 1998) and using personalized learning has been demonstrated to increase student achievement (Pane et al., 2015), the findings of this study that teacher's felt that learning a new personalized learning tool (Camtasia®) increased their level of self-efficacy could then support the argument to implement a new instructional strategy in this struggling school district. By creating their own videos, teachers are able to alter instruction so students may complete tasks that are more difficult with traditional instructional methods. Through the use of this type of scaffolding, teachers are able to provide students with interventions when needed (Reiser, 2004). If teachers are able to successfully implement a blended learning environment, then student should perform better than when taught in a traditional learning environment (Means et al., 2010).

Reading Articles

Another important factor mentioned that contributed to teacher ability to meet the instructional needs of all students was learning about the blended learning approach through reading the provided articles. Bandura (1977) states that self-efficacy may be raised through vicarious experience and Knowles (1988) supports that motivation to learn shifts to internal motivation as a learner matures. These two assumptions are aligned with the required class assignment to read articles independently to learn about blended learning, specifically the Stalker and Horn article describing the types of blended learning (2012).

Lesson Development

The teacher participants also indicated that creating a lesson plan to implement blended learning was a component that contributed to their self-efficacy. The lesson plan included how face-to-face versus online time should be spent, allowing the results from the online portion to drive instruction when meeting face-to-face (Fletcher 2012; Stalker & Horn, 2012; Watson, 2008). Through methods triangulation, it was discovered that the responses align with the results from the quality assurance data supporting Research Question 1, with instructional strategies having the highest mean. Teacher efficacy will need to be high to implement a new instructional method, especially when the new method is meant to improve an adverse situation (Bandura, 1977). In this situation, the adverse situation was raising student achievement and blended learning offered the opportunity to personalize learning to increase student achievement (Duhaney, 2012).

In summary, these responses give positive reinforcement for the workflow of the blended learning profession development because the teachers found the materials and activities of benefit to their level of self-efficacy. The effectiveness of the workflow could be contributed to Knowles (1988) adult learning theory shifting the focus from subject to problem centered as well as the trainer knowing the participants and creating a learning environment of easy to follow videos appropriate for all level of learners (Giannoukos et al., 2015).

<center>**Research Question 3**</center>

How can the blended learning professional development be improved to assist teachers in improving their level of self-efficacy?

No Improvement Needed

The majority of the open-ended responses (52%) stated that no improvement was needed for the professional development program. This is positive reinforcement to the design of the program and its content contributing to the efficacy of the teachers to implement blended learning. A possible rationale for success of this program could be attributed to the material and activities providing teachers with new skills and resources, and knowledge that directly related to their job (Sugar & Slagter von Tryon, 2014; Hunzicker, 2010). Another possible factor contributing to the success was a supportive environment, especially with the introduction of a new technology (Mirriahi et al., 2015).

More Face-to-Face Time

The open-response questions provided the suggested improvement of more face-to-face time (14%) during the professional development. Through the use of methods triangulation, the open-response answers were supported during the teacher interviews when three of the five teachers stated that more face-to-face time would have been beneficial and could have contributed to a higher level of self-efficacy. The training should allow for teachers to take time to make innovative changes to their instruction (Clark, 2012; Fletcher, 2012). Meeting once in a face-to-face setting does not allow for teachers to gain mastery of a new teaching style and optimal training takes place over time to reflect on the implementation process (Grosz, 2012; Hunzicker, 2010).

More Ways to Differentiate

More iterations of lesson differentiation for learners were also requested by 14% of the participants. This topic was mentioned once during the follow-up interviews. One teacher stated "it would be nice if we could have some type of mini demonstration of the different strategies." These results align with Bandura's (1977) vicarious experience factor which states the observation of other's success will provide observers with confidence in their own potential success. A Professional Learning Community could provide the opportunity to learn from how other teachers are implementing blended learning (Dufour, 2004).

In summary, these results suggest the participants felt the blended learning professional development was an effective method that increased their self-efficacy to implement blended learning. While approximately half of the participants indicated no improvements were needed for the professional development, suggestions for improvement included offering more face-to-face time as well as a collaborative piece to share how to differentiate learning as well as successes and struggles would increase the level of self-efficacy.

Implications

After analysis of the quality assurance data, the open-response questions, and the follow-up interviews, there are four implications that have been derived to improve the professional development program based on the themes that evolved from the data collected.

The first improvement to the program would be more face-to-face time. The program would benefit from an additional meeting at the end of the summer to answer teachers' questions, specifically about the software before the assignments are due. This would lead to the teachers' confidence level with the software, which was a major component of the professional development and one the teachers deemed beneficial.

The second improvement would be to add a collaborative piece for the teachers. A thread in the Google Classroom could allow for teachers to reflect on their experiences, share resources, as well as success and challenge stories. This would allow teachers to learn from each other and remove the isolation when working independently, thus feeling part of a supportive environment. These findings are similar to those of Mirriahi et al., (2015).

The third improvement that could be added to the professional development program would be to offer solutions to problems concerning students enrolled in a blended learning instructional program. A digital divide was a concern reported by the teacher and was also mentioned as a potential barrier in previous research (Ribble & Bailey, 2007). Similar to the findings of Bonk & Graham (2006), this research found that providing teachers with resources to combat how online work is to be completed away from school would lead to more confidence in a successful implementation process. The other issue that was reported low self-efficacy in the quality assurance data and was reinforced in the interviews was student motivation. It was also reported in the interviews that student motivation was a topic seldom covered in any teacher pre-service class or professional development program. This was a definite deficiency in the professional development program and could be added to lend to a higher level of self-efficacy in the student engagement factors.

The last suggested improvement to the professional development would be to provide more examples of the blended learning implementation process. One of Bandura's four efficacy expectations is a vicarious experience, which builds confidence with the observation of other's success (Bandura, 1977). If more examples were provided demonstrating what other teachers have done to implement blended learning in their classroom, through more articles or video

demonstration, then the confidence and self-efficacy of the teachers in this study may have been raised.

Recommendations

One limitation of this study was a small sample size. This study was based on a small sample size in a very specific context. The intent was not to generalize the results for a large group, but to analyze a specific program. To strengthen future studies a larger sample size would be optimal to be able to apply results to a larger audience. Another limitation of this study was the self-reporting aspect of the efficacy survey. For future studies a classroom observation with a common rubric would be a suggestion to assess the level the success of a blended learning implementation. Rather than teachers self-reporting their grasp of the concept learned in training, skilled observers could make that assessment based on observed instances of blended learning in the classroom. The last limitation of this study would be the small group of teachers interviewed after implementation. Interviewing all teachers that participated in the professional development program, rather than the few who were selected based on random sampling could strengthen the study. This would give researchers a clearer overview of the professional development program and its effectiveness in influencing teacher self-efficacy.

Emerging from the qualitative data and the interviews was the need for training teachers to raise student motivation and family involvement in their student's education. A future study showcasing secondary schools that excel in this area would be helpful to schools such as the one in the study that are struggling in these areas. One recent piece of legislation from the federal government, Every Student Succeeds Act (ESSA), requires schools to establish a goal oriented parental engagement plan, forces schools to develop an action oriented plan with measureable

goals. (U.S. Department of Education, n.d.) This act may also help schools struggling with effective parental involvement.

Future studies may also want to focus on the digital divide. As discussed in Chapter 2, the digital divide is a hindrance for school wanting to implement blended learning. Teachers in the current study also expressed concern with the blended learning implementation process due to their students' lack of technology away from school. A study that could focus on this problem may be able to offer schools a solution for students without access to technology.

Conclusion

This study has implications not only for the school district involved in the study, but also for other schools wishing to implement a blended learning instructional strategy. The workflow of the professional development in the study was well received by the teachers who participated as indicated by the level of efficacy indicated in the quantitative data and from the responses of the qualitative data. A school wanting to implement blended learning could replicate the same workflow for teachers in their district, noting the improvements garnered from this research. The findings in this study will be provided to the district to improve the future iterations of this program. With a current trend in education towards a personalized approach to instructional strategies, a blended learning curriculum would be a greater implementation option. The effective training of teachers will be key to a successful implementation process.

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Appendix A

Permission Letter

North Little Rock School District
2700 North Poplar Street
North Little Rock, AR 72114
Phone: (501) 771-8000

January 11th, 2018

To Whom it May Concern:

This is to verify that Brouke Reynolds had been granted permission by Kristie Ratliff to use the North Little Rock School District's quality assurance results from the 2017 summer professional development, Blended Learning in the Secondary Classroom.

Ms. Reynolds is a doctoral candidate for the Ed.D. degree at the University of Memphis. Her study will focus on the self-efficacy of secondary teachers to implement blended learning after receiving professional development for blended learning. She will be using data from a quality assurance survey distributed to the teachers after the completion of the professional development class.

In addition to the data set, the professional development office will provide her with a list of teachers that attended the professional development class for the purpose of selecting participants for follow-up interviews.

Kristie Ratliff

Director of Professional Development
North Little Rock School District.

Appendix B

Email Invitation

Hello Mr. /Mrs./Ms. Secondary Teacher:

Since you have completed the "Blended Learning in the Secondary Classroom" professional development program, I would like to invite you to participate in a study exploring the effectiveness of the professional development you received. The study will focus on how you have implemented blended learning in your classroom.

Your participation would involve one 60-minute interview conducted face-to-face at the time and location of your choice. A follow up conversation may be needed after the interview notes have been transcribed and evaluated, should there be questions for further clarification.

If you are interested in participating in the study, you will be provided with the University approved Consent Form that provides full details of the study and your rights as a participant. The information that you give will be completely confidential and your name will be given a pseudo identity for the final research product. Participation in this research is completely voluntary and there are no known risks associated with participating in this research study.

The study is being conducted as my dissertation research toward a University of Memphis doctoral degree through the College of Education's Department of Instruction and Curriculum Leadership with a concentration in Instructional Design and Technology.

I encourage you to please participate in this important study that will lead to improved professional development for implementing blended learning.

Please let me know if you are interested in participation. The best way to reach me is by email at cbrynlds@memphis.edu.

All the best,

Brouke Reynolds
Email: cbrynlds@memphis.edu

Appendix C

Workflow for Blended Professional Development

Learning objective: The participant will be able to understand and independently implement blended learning into their curriculum.

One hour face-to-face:
- Explain expectations of class
- Due date for final project
- Communicating with instructor
- Discussion of assigned articles (see online content)
- Assist with installation of Camtasia® software

Five hours online:
- Enroll in Google classroom (one hour to be completed before face-to-face)
- Introduction to Blended learning (one hour to be completed before face-to-face)
- Present articles to read:
- Classifying K-12 Blended Learning (Stalker & Horn, 2012)
- Blending Learning: The Convergence of Online and Face-to-Face Education (Watson, 2008)
- High School of the Future (Jacobs, 2016)
- Contribute to shared Google Slide presentation (one hour to be completed before face-to face)
- Final Project (complete after face-to-face question)
- Create a blended learning content specific unit
- Create an instruction video for a content specific lesson to align with blended learning unit

TSES-Teachers' Sense of Efficacy Scale

This questionnaire is designed to help gain a better understanding of the kinds of things that create difficulties for teachers in their school activities. Please indicate your opinion about each of the statements below, based on your experience with the blended learning professional development. Your answers are confidential.

* Required

1. How much can you do to get through to the most difficult students? *

	1	2	3	4	5	6	7	8	9	
Nothing	○	○	○	○	○	○	○	○	○	A Great Deal

2. How much can you do to help your students think critically? *

	1	2	3	4	5	6	7	8	9	
Nothing	○	○	○	○	○	○	○	○	○	A Great Deal

3. How much can your do to control the disruptive behavior in the classroom? *

	1	2	3	4	5	6	7	8	9	
Nothing	○	○	○	○	○	○	○	○	○	A Great Deal

4. How much can you do to motivate students who show low interest in school work? *

	1	2	3	4	5	6	7	8	9	
Nothing	○	○	○	○	○	○	○	○	○	A Great Deal

5. To what extent can you make your expectations clear about student behavior? *

	1	2	3	4	5	6	7	8	9	
Nothing	○	○	○	○	○	○	○	○	○	A Great Deal

6. How much can you do to get students to believe they can do well in school work? *

	1	2	3	4	5	6	7	8	9	
Nothing	○	○	○	○	○	○	○	○	○	A Great Deal

7. How well can you respond to difficult questions from your students? *

	1	2	3	4	5	6	7	8	9	
Nothing	○	○	○	○	○	○	○	○	○	A Great Deal

8. How well can you establish routines to keep activities running smoothly? *

	1	2	3	4	5	6	7	8	9	
Nothing	○	○	○	○	○	○	○	○	○	A Great Deal

9. How much can you do to help your students value learning? *

	1	2	3	4	5	6	7	8	9	
Nothing	○	○	○	○	○	○	○	○	○	A Great Deal

10. How much can you gauge student comprehension of what you have taught? *

	1	2	3	4	5	6	7	8	9	
Nothing	○	○	○	○	○	○	○	○	○	A Great Deal

11. To what extent can you craft good questions for your students? *

	1	2	3	4	5	6	7	8	9	
Nothing	○	○	○	○	○	○	○	○	○	A Great Deal

12. How much can you do to foster student creativity? *

	1	2	3	4	5	6	7	8	9	
Nothing	○	○	○	○	○	○	○	○	○	A Great Deal

13. How much can you to to get children to follow classroom rules? *

	1	2	3	4	5	6	7	8	9	
Nothing	○	○	○	○	○	○	○	○	○	A Great Deal

14. How much can you do to improve the understanding of a student who is failing? *

	1	2	3	4	5	6	7	8	9	
Nothing	○	○	○	○	○	○	○	○	○	A Great Deal

15. How much can you to to calm a student who is disruptive of noisy? *

	1	2	3	4	5	6	7	8	9	
Nothing	○	○	○	○	○	○	○	○	○	A Great Deal

16. How well can you establish a classroom management system with each group of students? *

	1	2	3	4	5	6	7	8	9	
Nothing	○	○	○	○	○	○	○	○	○	A Great Deal

17. How much can you do to adjust your lessons to the proper level for individual students? *

	1	2	3	4	5	6	7	8	9	
Nothing	○	○	○	○	○	○	○	○	○	A Great Deal

18. How much can you use a variety of assessment strategies? *

	1	2	3	4	5	6	7	8	9	
Nothing	○	○	○	○	○	○	○	○	○	A Great Deal

19. How well can you keep a few problem students from ruining an entire lesson? *

	1	2	3	4	5	6	7	8	9	
Nothing	○	○	○	○	○	○	○	○	○	A Great Deal

20. To what extent can you provide an alternative explanation or example when students are confused? *

	1	2	3	4	5	6	7	8	9	
Nothing	○	○	○	○	○	○	○	○	○	A Great Deal

21. How well can you respond to defiant students? *

	1	2	3	4	5	6	7	8	9	
Nothing	○	○	○	○	○	○	○	○	○	A Great Deal

22. How much can you assist families in helping they children do well in school? *

	1	2	3	4	5	6	7	8	9	
Nothing	○	○	○	○	○	○	○	○	○	A Great Deal

23. How well can you implement alternative strategies in your classroom? *

	1	2	3	4	5	6	7	8	9	
Nothing	○	○	○	○	○	○	○	○	○	A Great Deal

24. How well can you provide appropriate challenges for very capable students? *

	1	2	3	4	5	6	7	8	9	
Nothing	○	○	○	○	○	○	○	○	○	A Great Deal

What component of the blended learning professional development contributed most to your level of self-efficacy? *

Your answer

Why was that component most beneficial? *

Your answer

Which area of blended learning professional development cold be improved? *

Your answer

What topics in the blended learning professional development should receive more emphasis? *

Your answer

What is your age? *

○ 20-30

○ 31-40

○ 41-50

○ Over 50

What is your sex? *

○ Male

○ Female

What is your race? *

○ White

○ Black

○ Hispanic

○ Asian

○ Other

What is your education level? *

○ Less than Bachelor's

○ Bachelor's

○ Master's

○ Specialst

○ Doctorate

Year of teaching experience? *

○ Less than 3 years

○ 3-9 years

○ 10-20 years

○ over 20 years

What grade level do you teach? *

○ Middle School

○ High school

○ Other: _____

Appendix E

Permission to use the TSES

COLLEGE OF EDUCATION AND HUMAN ECOLOGY
THE OHIO STATE UNIVERSITY

ANITA WOOLFOLK HOY, PH.D.

PROFESSOR
PSYCHOLOGICAL STUDIES IN EDUCATION

Dear

You have my permission to use the *Teachers' Sense of Efficacy Scale* in your research. A copy the scoring instructions can be found at:

http://u.osu.edu/hoy.17/research/instruments/

Best wishes in your work,

Anita Woolfolk Hoy, Ph.D.
Professor Emeritus

Interview Protocol

Semi-structured Interview Protocol
Administered one semester after teachers complete the "Blended Learning in the Secondary Classroom" professional development program.

Interview Question 1: Now that you have had a few months to implement blended learning, please describe in what ways the professional development was the most helpful?

Potential follow up questions:
    A. Which components of the professional development helped best prepare you to implement blended learning?

    B. Why do you think these components of the professional development have been the most helpful to you?

Relates to Research Question 2. What component of the blended learning professional development contributed the most to teacher's level of self-efficacy?

Interview Question 2: How could the blended learning professional development be improved?
Potential follow up questions:
    A. What changes in the professional development would have helped you feel more comfortable implementing blended learning?

    B. What barriers have you experienced implementing blended learning?

    C. How could the professional development have helped minimize these?

    D. Would your level of self-efficacy have been higher if those topics had been addressed in professional development? Please explain why.

Relates to Research Question 3. How can the blended learning professional development be improved to assist the teachers in improving their level of self-efficacy?

Appendix G

Consent Form

Institutional Review Board

315 Administration Bldg.
Memphis, TN 38152-3370
Office: 901.678.2705
Fax: 901.678.2199

Consent to Participate in a Research Study

PREPARING FOR BLENDED LEARNING:
EXAMINING SELF-EFFICACY OF SECONDARY TEACHERS

WHY ARE YOU BEING INVITED TO TAKE PART IN THIS RESEARCH?

You are being invited to take part in a research study about_ secondary teachers' self-efficacy levels after receiving professional development to implement a blended learning environment. You are being invited to take part in this research study because *you are a secondary teacher that participated in blended learning professional development.* If you volunteer to take part in this study, you will be one of about_3-8_people to do so.

WHO IS DOING THE STUDY?

The person in charge of this study is _*Brouke Reynolds*__ of North Little Rock School District-Secondary Technology Facilitator. She is being guided in this research by _*Dr Clif Mims and Dr. Deborah Lowther* of the University of Memphis department of Instructional Curriculum and Leadership.

WHAT IS THE PURPOSE OF THIS STUDY?

The purpose of this cross-sectional survey study is to examine the level of self-efficacy of secondary teachers at an urban secondary public school district to teach in a blended learning environment after receiving blended professional development.

ARE THERE REASONS WHY YOU SHOULD NOT TAKE PART IN THIS STUDY?

Only classroom practitioners should take part in this study,

WHERE IS THE STUDY GOING TO TAKE PLACE AND HOW LONG WILL IT LAST?

The study will take place at the North Little Rock school district. The study interviews should be completed within a two-week period.

WHAT WILL YOU BE ASKED TO DO?

You be asked to participate in an interview. The interview will be approximately 60 minutes. The interview will take place in your classroom at a time of your convenience. The interview will be recorded, transcribed, and analyzed for emerging themes to be used in the dissertation study. Your name will not be included with the interview data. Once the study is complete, the interview data will remain in a locked file cabinet n the researcher's office for potential use in future studies.

WHAT ARE THE POSSIBLE RISKS AND DISCOMFORTS?

To the best of my knowledge, the things you will be doing have no more risk of harm than you would experience in everyday life.

WILL YOU BENEFIT FROM TAKING PART IN THIS STUDY?

There is no guarantee that you will get any benefit from taking part in this study. Your willingness to take part, however, may, in the future, help the educational arena a whole better understand this research topic.

Institutional Review Board

315 Administration Bldg.
Memphis, TN 38152-3370
Office: 901.678.2705
Fax: 901.678.2199

THE UNIVERSITY OF
MEMPHIS.
Dreamers. Thinkers. Doers.

DO YOU HAVE TO TAKE PART IN THE STUDY?

If you decide to take part in the study, it should be because you really want to volunteer. You will not lose any benefits or rights you would normally have if you choose not to volunteer. You can stop at any time during the study and still keep the benefits and rights you had before volunteering.

WHAT WILL IT COST YOU TO PARTICIPATE?
There are no costs associated with taking part in the study.

WILL YOU RECEIVE ANY REWARDS FOR TAKING PART IN THIS STUDY?
There are no rewards for taking part in this study.

WHO WILL SEE THE INFORMATION THAT YOU GIVE?
We will make every effort to keep private all research records that identify you to the extent allowed by law. Your information will be combined with information from other people taking part in the study. You will not be personally identified in these written materials. The results of this study may be published; however, we will keep your name and other identifying information private.

CAN YOUR TAKING PART IN THE STUDY END EARLY?
If you decide to take part in the study you still have the right to decide at any time that you no longer want to continue. You will not be treated differently if you decide to stop taking part in the study.

The individual conducting the study may need to withdraw you from the study. This may occur if you are not able to follow the directions given to you, if they find that your being in the study is more risk than benefit to you, or if the agency funding the study decides to stop the study early for a variety of scientific reasons.

WHAT IF YOU HAVE QUESTIONS, SUGGESTIONS, CONCERNS, OR COMPLAINTS?
Before you decide whether to accept this invitation to take part in the study, please ask any questions that might come to mind now. Later, if you have questions, suggestions, concerns, or complaints about the study, you can contact the investigator,_ Brouke Reynolds_ at reynoldsb@nlrsd.org_. If you have any questions about your rights as a volunteer in this research, contact the Institutional Review Board staff at the University of Memphis at 901-678-2705. We will give you a signed copy of this consent form to take with you.

_____   _____
Signature of person agreeing to take part in the study   Date

_____
Printed name of person agreeing to take part in the study

_____   _____
Name of [authorized] person obtaining informed consent   Date

Appendix H

IRB approval

THE UNIVERSITY OF
MEMPHIS.

Institutional Review Board
Office of Sponsored Programs
University of Memphis
315 Admin Bldg
Memphis, TN 38152-3370

Feb 5, 2018

PI Name: Catherine Reynolds
Co-Investigators:
Advisor and/or Co-PI: Deborah Lowther, Clif Mims
Submission Type: Initial
Title: Preparing For Blended Learning:Examing Self-Efficacy Of Secondary Teachers
IRB ID: #PRO-FY2018-373

Expedited Approval: Feb 5, 2018
Expiration: Feb 5, 2019

Approval of this project is given with the following obligations:

1. This IRB approval has an expiration date, an approved renewal must be in effect to continue the project prior to that date. If approval is not obtained, the human consent form(s) and recruiting material(s) are no longer valid and any research activities involving human subjects must stop.

2. When the project is finished or terminated, a completion form must be submitted.

3. No change may be made in the approved protocol without prior board approval.

Thank you,
James P. Whelan, Ph.D.
Institutional Review Board Chair
The University of Memphis.

Appendix I

Email to Request Quality Assurance Data

Request for quality assurance data

Brouke Reynolds (cbrynlds)
Today, 4:10 PM
ratliffk@nlrsd.org; Clif Mims (clifmims) ⌄

👍   ↩ Reply | ⌄

Mrs. Ratliff-
I have obtrained IRB approval from the University of Memphis for my disseration study. I am requesting the quality assurance data from the blended learning professional development as well as a list of the participants of the professional development session. Thank you-

Brouke Reynolds
Doctoral Student | IDT
Class of 2018
The University of Memphis
501.519.0833

Appendix J

TSES Detailed Results

TSES Detailed Results by Scale, Frequency, Percentage, Standard Deviation, and Mean Score (highest to lowest)

Scale: 1 = Nothing; 9 = A Great Deal

| Survey Items Listed from highest to lowest mean scores | Scale | | | | | | | | | SD | Mean |
	1 # %	2 # %	3 # %	4 # %	5 # %	6 # %	7 # %	8 # %	9 # %		
To what extent can you make your expectations clear about student behavior?	0	0	0	0	0	0	3 15.8%	8 42.1%	8 42.1%	.733	8.26
How well can you establish routines to keep activities running smoothly?	0	0	0	0	0	0	2 10.5%	10 52.6%	7 36.8%	.653	8.26
To what extent can you provide an alternative explanation or example when students are confused?	0	0	0	0	0	0	2 10.5%	11 57.9%	6 31.6%	.631	8.21
How well can you respond to difficult questions from your students?	0	0	0	0	0	0	6 31.6%	6 31.6%	7 36.8%	.848	8.05
How much can you do to foster student creativity?	0	0	0	0	1 5.3%	0	2 10.5%	12 63.3%	4 21.1%	.911	7.95
How much can you do to get students to believe they can do well in schoolwork?	0	0	0	0	0	2 10.5%	5 26.3%	6 31.6%	6 31.6%	1.015	7.84
How much can you use a variety of assessment strategies?	0	0	0	0	0	1 5.3%	7 36.8%	6 31.6%	5 26.3%	.918	7.79
How well can you provide appropriate challenges for very capable students?	0	0	0	0	0	1 5.3%	4 21.1%	12 63.3%	2 10.5%	.713	7.79
To what extent can you craft good questions for your students?	0	0	0	0	0	1 5.3%	6 31.6%	10 52.6%	2 10.5%	.749	7.68
How much can you do to help your students think critically?	0	0	0	0	0	4 21.1%	4 21.1%	6 31.6%	5 26.3%	1.116	7.63
How well can you establish a classroom management system with each group of students?	0	0	0	0	0	1 5.3%	9 47.4%	5 26.3%	4 21.1%	.895	7.63
How well can you respond to defiant students?	0	0	0	0	0	4 21.1%	4 21.1%	6 31.6%	5 26.3%	1.116	7.63
How much can you gauge student comprehension of what you have taught?	0	0	0	0	0	1 5.3%	8 42.1%	8 42.1%	2 10.5%	.769	7.58

Survey Items Listed from highest to lowest mean scores	Scale									SD	Mean
	1 # %	2 # %	3 # %	4 # %	5 # %	6 # %	7 # %	8 # %	9 # %		
How much can you do to adjust your lessons to the proper level for individual students?	0	0	0	0	1 5.3%	1 5.3%	8 42.1%	5 26.3%	4 21.1%	1.073	7.53
How well can you implement alternative strategies in your classroom?	0	0	0	0	1 5.3%	1 5.3%	6 31.6%	10 52.6%	1 5.3%	.905	7.47
How well can you keep a few problem students from ruining an entire lesson?	0	0	0	0	1 5.3%	2 10.5%	7 36.8%	6 31.6%	3 15.8%	1.071	7.42
How much can you do to control the disruptive behavior in the classroom?	0	0	0	0	2 10.5%	3 15.8%	5 26.3%	4 21.1%	5 26.3%	1.342	7.37
How much can you to calm a student who is disruptive of noisy?	0	0	0	0	2 10.5%	3 15.8%	4 21.1%	6 31.6%	4 21.1%	1.300	7.37
How much can you do to help your students value learning?	0	0	1 5.3%	0	1 5.3%	1 5.3%	5 26.3%	9 47.4%	2 10.5%	1.416	7.32
How much can you to get children to follow classroom rules?	0	0	0	0	2 10.5%	2 10.5%	6 31.6%	6 31.6%	3 15.8%	1.204	7.32
How much can you do to get through to the most difficult students?	0	0	0	0	2 10.5%	4 21.1%	6 31.6%	3 15.8%	4 21.1%	1.302	7.16
How much can you do to improve the understanding of a student who is failing?	0	0	0	0	2 10.5%	3 15.8%	8 42.1%	4 21.1%	2 10.5%	1.129	7.05
How much can you assist families in helping their children do well in school?	0	0	0	1 5.3%	2 10.5%	4 21.1%	4 21.1%	4 21.1%	4 21.1%	1.508	7.05
How much can you do to motivate students who show low interest in schoolwork?	0	0	0	0	1 5.3%	7 36.8%	6 31.6%	3 15.8%	2 10.5%	1.100	6.89