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A Phenomenological Study of Teacher Perceptions of Blended Learning: Definition, Adoption, and Professional Development

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by

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A Dissertation submitted to the Education Faculty of Lindenwood University in Partial fulfillment of the requirements for the degree of

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Declaration of Originality

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

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Abstract

Blended learning has become a popular alternative to traditional instruction. Professional development that supports teachers' practice of the phenomenon continues to evolve (Shand & Glassett Farrelly, 2017). The purpose of this phenomenological, mixed method study was to investigate high school teachers' perceptions, through the lens of Knowles' adult learning theory (Knowles, Holton, & Swanson, 2015), of the definition of blended learning, the impact previous professional development had in shaping definitional understanding and implementation of blended learning, and perceptions of future professional development needs. Few studies have focused on secondary blended learning professional development and the impact shared definitions of blended learning had on the effectiveness of professional development (Gurley, 2018; Halverson, Spring, Huyett, Henrie, & Graham, 2017; Shand & Glassett Farrelly, 2017). Analysis of quantitative data, collected in four Southwest Missouri high schools, revealed emergent definitional themes that informed the development of the qualitative instrument. Responses from 12 teacher interviews were examined and four themes emerged: interpretations, technocentric, instructional backing, and professionals' needs. Findings revealed a shared definition of blended learning did not exist among teachers. Teachers perceived previous blended learning professional development was ineffective. Teachers perceived future blended learning professional development that defined and modeled blended learning, and acknowledged their needs as adult learners, would support their practice of blended learning. The conclusions reached in this study have important implications for blended learning professional development planners and instructional support specialists.

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Chapter One: Introduction

The popularity of blended learning in America's secondary schools rose sharply in the last 15 years (Gurley, 2018). School district leaders, encouraged by blended learning's potential to support differentiation, student choice, the effectiveness of instruction, and efficiency, made substantial investments to make computers available to teachers and students (Vaughan, Reali, Stenbom, Van Vuuren, & MacDonald, 2017). Christensen, Horn, and Johnson (2017) suggested the investment in technology, however, was not matched by an investment in teacher training that supported shared definitions of blended learning. Computers continued to be primarily used to supplement traditional teaching methods rather than as a primary teaching method for "student-centered learning and project-based teaching practices" (Christensen et al., 2017, p. 83). The lack of shared blended learning terminology and professional development that supported teachers' adoption and practice of the phenomenon limited the effectiveness of blended learning (Parks, Oliver, & Carson, 2016; Vaughan et al., 2017).

This chapter includes an overview and background of the study and the theoretical framework that underpinned the study. Also presented in this chapter are the statement of the problem, the purpose of the study, and the research questions that guided the study. Additionally, the significance of this study and how this research advanced understanding of the problem will be presented. Concluding the chapter are the key definitions, delimitations, limitations, and assumptions.

Background of the Study

Calls for greater national school accountability and increased emphasis on student learning led many school districts to adopt new methods of instruction (Molnar et al.,

2017; Moore, Robinson, Sheffield, & Phillips, 2017). Born of increased accountability measures from the No Child Left Behind Act and Race to the Top, innovative practices, such as blended and online learning, became more common in schools **(**Horn & Freeland-Fisher, 2017; Kieschnick, 2017). The number of American high school students enrolled in blended learning courses grew annually between 2000 and 2015 (Foulger, Graziano, Schmidt-Crawford, & Slykhuis, 2017; Gurley, 2018; Molnar et al., 2017). According to Molnar et al. (2017), in 2015 alone, the enrollment of high school students in courses with a blended component rose by 40% (p. 14). Although blended learning has the capacity to alter access to new ideas radically and deliver curriculum in new ways, professional development that supported teachers' implementation and use of blended learning did not correlate with blended learning's prolific growth (Kieschnick, 2017).

In the haste to find a panacea in technology for the problems facing education, school district administrators found blended learning initiatives implemented by teachers failed to meet the needs of students (Kieschnick, 2017). Moore et al. (2017) argued that blended learning offered greater learning gains over traditional classroom models; however, many teachers were not equipped to practice effective instruction through blended learning. The results of several studies (Alvarado-Alcantar, Keeley, & Sherrow 2018; Black & Thompson, 2018; Halverson & Graham, 2019; Moore et al., 2017; Rice & Dykman, 2018; Shand & Glassett Farrelly, 2017; Vaughan et al., 2017) indicated the greatest blended learning implementation challenges were a common understanding of what blended learning means, a lack of definitive blended learning initiative goals, time, access to technology resources, lack of implementation frameworks, and limited professional development. The omission of clearly defined blended learning terminology

limited educators from understanding their shared experiences and challenges (Gurley, 2018). Furthermore, Vaughan et al. (2017) found that blended learning adoption rates were slowed in the absence of a clear definition of blended learning.

Horn and Freeland-Fisher (2017) noted the benefits of blended learning, such as real-time data collection and expanded time for teachers to work individually with students, but advised integration of blended learning should be done intentionally, recognizing the need for professional development that emphasized an understanding of shared terminology and specific goals. A frustration common among teachers implementing blended learning was the lack of professional development teachers were offered and misunderstandings about the definition of blended learning (Riel, Lawless, & Brown, 2016). To be successful, Riel et al. (2016) suggested teachers' perspectives about misunderstandings concerning terminology and blended learning pedagogy needed to be considered during implementation and future professional development.

Theoretical Framework

The theoretical framework of adult learning theory was used to guide this study. Rooted in the foundational work of Eduard Lindeman, adult learning theory was most advanced by Malcolm Knowles (Knowles, Holton, & Swanson, 2015; Lindeman, 1926). Building on the theory of constructivism, where learners create understanding based on what they already know and believe, Knowles' adult learning theory is more concerned with how the process of adult learning occurs than what should be learned (Anagün, 2018; Knowles et al., 2015).

Commonly referred to as andragogy (Knowles et al., 2015; Storey & Wang, 2017), adult learning theory is defined as the "art and science of helping adults learn"

(Storey & Wang, 2017, p. 108). Recognizing the unique needs of adult learners, Knowles cultivated adult learning theory as a counter to the term pedagogy, which relates specifically to the teaching of children (Knowles et al., 2015). Knowles argued the distinctive learning needs of adults requires teaching methods different from those employed with children; thus, andragogical conventions should be engaged when teaching adult learners (Knowles et al., 2015).

The adult learning theory framework was relevant to this study because "andragogy presents core principles of adult learning that in turn enable those designing and conducting adult learning to build more effective learning processes for adults" (Knowles et al., 2015). Since the key precepts of adult learning theory (andragogy) focus on the process of learning, not the purpose of learning (Knowles et al., 2015), the theoretical framework of adult learning theory is a suitable lens through which to view a study of blended learning professional development.

Statement of the Problem

Due to growing calls for school reform (Molnar et al., 2017; Moore et al., 2017) and the growth of technology (Foulger et al., 2017), blended learning courses increased sharply over the last 15 years in American schools (Gurley, 2018). However, the term blended learning is often misunderstood by teachers, and the lack of a standard definition was prevalent among teachers (Gurley, 2018; Vaughan et al., 2017). Additionally, many teachers believed blended learning was achieved by merely adding technology to face-to-face courses (Vaughan et al., 2017). Hence, teachers tended to use computers to "sustain their existing practices and pedagogies rather than displace them" (Christensen et al., 2017, p. 84).

Education leaders in the U.S. Department of Education, writing in the National Education Technology Plan (2017), suggested teachers must be offered more access to training focused on online and blended learning instruction. Furthermore, officials within the Department of Education argued blended learning continued to demonstrate strong potential to support the individualized learning demands of students (U.S. Department of Education, 2017). However, current professional development, aimed at assisting teachers engaged in blended learning, failed to adequately support teachers (U.S. Department of Education, 2017). Parks, Oliver, and Carson (2016) argued effectively preparing and training teachers required professional development that was personalized and emphasized the pedagogical variances between blended learning and conventional approaches. Blended learning implementation was not easy; however, through well-structured and timely professional development in which a shared understanding of the term blended learning is emphasized, blended learning could be achieved (Lalima & Dangwal, 2017).

Most research on blended learning and blended learning professional development occurred internationally and at the collegiate level (Moore et al., 2017; Spring & Graham, 2017). Furthermore, much of the research on blended learning was centered on comparative studies of blended learning programs and traditional programs and the benefits of these designs (Diep, Zhu, & Struyven, 2017). Few studies reflected current trends in blended learning professional development in secondary grades, and fewer studies focused on how blended learning terminology influenced pedagogical practices (Moore et al., 2017). In a review of thematic patterns in blended learning literature, Spring and Graham (2017) found few studies specific to blended learning

professional development, concluding “we were surprised to find it so rarely examined” (p. 354). The shortage of research at the high school level, focused on blended learning terminology and professional development, presented a gap in the literature that limited the support available to professionals who wished to implement blended learning programs in their schools.

In part, the problem is without a shared definition of blended learning there is no common terminology by which teachers can define the practice. Additionally, the problem is the absence of a shared definition limited the effectiveness of professional development that supported the application of blended learning. Investigating the perceptions of teachers practicing blended learning at the high school level concerning the meaning of blended learning and participation in professional development that supports blended learning implementation can provide understanding and direction to educators who are transitioning from traditional instructional experiences to blended learning programs.

Purpose of the Study

The purpose of this phenomenological, mixed method study of teachers’ perceptions about blended learning in four southwest Missouri high schools, identified as practicing blended learning, was threefold. The first purpose of this study was to determine if there was widespread understanding of the term “blended learning” among high school teachers. The term “blended learning” was frequently misinterpreted by teachers (Gurley, 2018) and the lack of a clear definition negatively impacted implementation (Vaughan et al., 2017). The second purpose of this study was to understand how previous professional development experiences shaped the knowledge of

the definition and practice of blended learning. Few studies reflected how blended learning professional development impacted high school teachers' adoption and practice of blended learning (Moore et al., 2017; Spring & Graham, 2017). The third purpose of this study was to establish if future professional development, emphasizing blended learning terminology, would better support teachers' practice of blended learning. Parks et al. (2016) found most secondary professional development programs focused exclusively on technology, failed to identify definitions of blended learning, and rarely met the individual needs of teachers.

Research questions. The following research questions guided the study:

1. What do high school teachers perceive as the definition of blended learning?
2. What are high school teachers' perceptions of previous professional development experiences that support blended learning instruction?
3. What future professional development would high school teachers perceive as supportive to their practice of blended learning in the classroom?

Significance of the Study

The results of this study addressed the shortcomings that existed in the literature on blended learning terminology and professional development at the secondary level. Although trends in high school blended learning had been outlined in previous studies (Halverson et al., 2017; Shand & Glassett Farrelly, 2017), few studies had focused specifically on blended learning terminology and its impact on early and sustained professional development for effective integration of blended learning (Gurley, 2018; Halverson et al.,2017; Moore et al., 2017; Vaughan et al., 2017). The findings of this

study will be used to support secondary teachers to practice blended learning instruction effectively and to inform blended learning professional development planners.

A significant contribution of this study was its approach to considering blended learning professional development and terminology through the theoretical framework of adult learning theory (Knowles et al., 2015). By grounding the study in adult learning theory, the study remained aligned to the learning needs of those who are tasked with practicing blended learning. In comparison, studies dedicated to blended learning professional development at the secondary level were predominately rooted in the International Association for K12 Online Learning (iNACOL) framework (Schwirzke, Vashaw, & Watson, 2018), the Community of Inquiry (CoI) framework (Gurley, 2018), and the Technology, Pedagogy, and Content Knowledge (TPACK) framework (Archambault & Kennedy, 2018). Though valuable, the iNACOL, CoI, and TPACK frameworks are most practical for assessing the depth of teachers' blended learning integration (Kimmons and Hall, 2018), not the professional development needs of adult learners.

The conclusions reached in this study have substantial implications for how future blended learning professional development can better prepare teachers to teach in blended environments. Additionally, research about how blended learning terminology impacted blended learning adoption, unique to this study (Parks et al., 2016; Vaughan et al., 2017), will further guide professional development planners' support of blended learning initiatives. Thus, the benefits of blended learning, such as student-centered classrooms that foster student choice (Horn & Staker, 2015), efficient data collection (Horn & Freeland-Fisher, 2017), flexibility (Shand & Glassett Farrelly, 2018), improved

communication skills (Lalima & Dangwal, 2017), greater access to instructional material and learning resources (Halverson & Graham, 2019), and deeper content engagement (Vaughan et al., 2017) can be fully realized.

Definition of Key Terms

For the purposes of this study, the following terms are defined:

Blended learning. Blended learning is defined as a combination of face-to-face class time and online learning within the same course (Gurley, 2018).

Face-to-face learning. Face-to-face learning, synonymous with traditional learning, is defined as a teacher meeting with students in a classroom or other physical learning environment (Dziuban, Graham, Moskal, Norberg, & Sicilia, 2018).

One-to-one (1:1). One-to-one is defined as a school program that provides all students with a technology device (Horn & Staker, 2015).

Online learning. Online learning, often referred to as distance learning, is defined as the delivery of instruction through electronic means, primarily the internet where all learning content is delivered through electronic formats and completely replaces face-to-face instruction (Arias, Swinton, & Anderson, 2018).

Professional development. Teräs and Kartoglu (2017) defined professional development as "activities that are intended to engage professionals in new learning about their professional practice" (p. 192).

Technology-rich instruction. Technology-rich instruction is defined as using technology tools such as websites, online textbooks, document readers, online word processing tools, and digital tools to enhance, but not replace, the content delivered through face-to-face instruction (Horn & Staker, 2015).

Delimitations, Limitations, and Assumptions

The scope of the study was bounded by the following delimitations:

Time frame. Data collection occurred during semester one of the 2019-2020 school year.

Location of the study. The study took place in four Southwest Missouri high schools.

Sample. The sample was derived from a population of 154 teachers, employed in four high schools, whose teaching experiences ranged from first year of service to final year of service.

Criteria. Only certified teachers, teaching in one of four selected high schools, were considered for inclusion in the study.

The following limitations were identified in this study:

Sample demographics. The samples selected for participation in this study were limited to four Southwest Missouri high schools.

Instrument. The survey and interview questions utilized for this study were limited in validity as the questions were designed by the researcher.

Selection criteria. A limitation associated with purposive sampling is the inability to generalize research findings (Sharma, 2017).

The following assumptions were accepted:

1. Participant responses were offered willingly and free of bias.

2. Participants could have withdrawn from the study at any time.

Summary

Although the use of blended learning has risen dramatically, professional

development to support teachers' adoption and practice of blended learning has not proved beneficial (Gurley, 2018; Moore et al., 2017). Most studies on blended learning focused on student experiences, while neglecting the needs of adult learners charged with establishing blended platforms (Dziuban et al., 2018). Teacher misconceptions about the definition of blended learning and limited research on blended learning professional development best practices restricted the instructional effectiveness of blended learning (Gurley, 2018; Vaughan et al., 2017).

The purpose of this study was to determine if there was understanding of the term "blended learning" among secondary teachers, how previous professional development experiences shaped the understanding of the definition and practice of blended learning, and how future professional development could better support the needs of teachers. The significance of this study was its contribution to the limited literature focused on how blended learning terminology influenced instruction and guided professional development planning (Moore et al., 2017). Utilizing adult learning theory, as the theoretical framework for this study, focused the research on the process of adult learning and the implications for future professional development.

Chapter Two includes a comprehensive review of the literature connected to adult learning theory, blended learning, and professional development. The essential elements of adult learning theory, the theoretical framework that shaped this study, are presented along with a review of the six principles of andragogy. A review of the literature pertaining to blended learning terminology, the benefits and challenges associated with blended learning, blended learning models, and components of the implementation and integration process are presented. In addition, an examination of the literature and

research linked to pre-service and in-service professional development that supports blended learning will conclude Chapter Two.

Chapter Two: Review of Literature

Most research on blended learning focused on comparative studies of blended learning and traditional programs and the effects of blended learning on student outcomes (Diep et al., 2017; Moore et al., 2017; Spring & Graham, 2017). Few studies reflected how blended learning professional development in secondary grades impacted teachers' blended learning instruction, and fewer studies focused on how blended learning terminology influenced pedagogical practices (Moore et al., 2017). The purpose of this study was to determine secondary teachers' understanding of the term "blended learning", identify how previous professional development shaped the knowledge of the definition and practice of blended learning, and establish if future professional development that emphasized blended learning terminology would better support teachers' practice of blended learning.

A review of the literature associated with the theoretical framework used to guide this study, blended learning, and professional development is provided in Chapter Two. Adult learning theory, the theoretical framework selected to shape this study, is presented along with a review of the six principles of andragogy. A review of the literature pertaining to blended learning terminology, the benefits and challenges associated with blended learning, blended learning models, and essential elements of the implementation and integration process are presented. An analysis of the literature and research linked to pre-service and in-service blended learning professional development conclude the literature review.

Theoretical Framework

Coined by German school teacher Alexander Kapp in 1833, andragogy, defined

as the “art and science of helping adults learn” (Storey & Wang, 2017, p. 108), was devised to address the unique needs of adult learners (Loeng, 2017; Sato, Haegele, & Foot, 2017). Built on the andragogical tenets articulated by Kapp, the foundation of modern adult learning theory was established by Lindeman and expanded by Knowles (Lindeman, 1926; Knowles et al., 2015). Shaped by the constructivist ideology of Dewey, Lindeman (1926) argued the focus of adult learning should rest on “method and not content” (p. 179). Lindeman (1926) proposed “the purpose of adult education is to give meaning to the categories of experiences, not to classifications of knowledge” (p. 195). Similarly, Knowles emphasized adult learning theory is more concerned with how the process of adult learning occurs rather than what should be learned (Knowles et al., 2015). Considering the principles of adult learning theory focus on the process of learning, not the purpose of learning (Knowles et al., 2015), the theoretical framework of adult learning theory is an appropriate lens through which to view a study of blended learning professional development.

Lindeman categorized the early core principles of andragogy, which would serve as the foundation for Knowles’ six core principles of adult learning (Storey & Wang, 2017). Lindeman’s five core principles were (a) adult motivation to learn is found in the need to learn, (b) adult learning is oriented toward self-centeredness, (c) adults bring vast experiences to the learning environment, (d) adults are independent learners and desire self-direction, and (e) differences among individuals increases with age (Knowles et al., 2015; Lindeman, 1926; Loeng, 2017; Storey & Wang, 2017). Ultimately, Lindeman (1926) argued the development of the principles of andragogy supported the purpose of adult education which is to “put meaning into the whole of life” (p. 7).

Expanding on the work of Lindeman, Knowles acknowledged the traditional pedagogical model of childhood learning did not meet the unique needs of adult learners (Knowles et al., 2015; Sato et al., 2017; Yarbrough, 2018). Pedagogy generally refers to an education model predicated on a teacher-centric position, where the teacher, according to Ozuah (2005), "determines what will be learned, how it will be learned, when it will be learned, and if it has been learned" (p. 83). Ozuah (2005) summarized four early principles of pedagogy that Lindeman and Knowles challenged as ill-fitting to adult learners. First, learners did not know their "own learning needs" (Ozuah, 2005, p. 83) and were dependent on an instructor. Second, learning was "subject-centered" (Ozuah, 2005, p. 83) and curriculum should be developed around subjects, such as math or English. Third, "extrinsic motivation" (Ozuah, 2005, p. 83) was the force that drove learners' desire to learn. Fourth, learners' "prior experiences" (Ozuah, 2005, p. 83) were irrelevant to present learning.

While advancing the differences between adult and child learners, Knowles was particularly influenced by his contemporaries in the field of psychology (Ozuah, 2005). Jung, Rogers, Maslow, Erikson, Houle, Freud and Tough were significant in shaping Knowles' attitude toward adult learning (Knowles et al., 2015; Ozuah, 2005). The learner-centered approach promoted in andragogy stands in contrast to the teaching-centered position found in pedagogy (Knowles et al., 2015; Ozuah, 2005). Andragogy places the emphasis of learning on the learner, while the role of the teacher becomes one of facilitator or guide (Knowles et al., 2015). Knowles' promotion of adult learning theory resulted in a set of principles that separates andragogy from pedagogy (Knowles et al., 2015; Sharifi, Soleimani, & Jafarigohar, 2017). The six principles of andragogy are

(a) the learners' need to know, (b) the learners' readiness to learn, (c) the learners' self-concept, (d) the learners' experiences, (e) the orientation to learning, and (f) the learners' motivation (Knowles et al., 2015; Ozuah, 2005; Storey & Wang, 2017). Table 1 shows a summary of the key features of the six principles of adult learning theory.

Table 1

Key Features of the Six Principles of Adult Learning Theory

Adult Learning Theory Principle	Key Features
Learners' Need to Know	Adult learners need to know the value in learning and why they need to learn something (Knowles et al., 2015).
Learners' readiness to learn	Adult learners are driven to learn when immediate needs or developmental tasks are recognized (Merriam, 2017).
Learners' self-concept	Adult learners are self-directed learners and have a "deep psychological need to be seen by others and treated by others as being capable of self-direction" (Knowles et al., 2015, p. 65).
Learners' experiences	Adult learners accumulate a vast array of life experiences that offer valuable learning resources (Cochran, & Brown, 2016). Adult learners wish to have their experiences recognized (Knowles et al., 2015).
Learners' orientation to learning	Adult learners, as they develop, shift their self-concept from one of a dependent nature toward one of a self-directing nature (Knowles et al., 2015; Merriam, 2017).
Learners' motivation	Adult learners are driven by internal forces rather than external forces (Knowles et al., 2015).

Learners' need to know. Adult learners are more motivated to learn if the purpose for learning is understood (Cochran, & Brown, 2016). The principle of the

learners' need to know assumes "adults need to know why they need to learn something before undertaking to learn it" (Knowles et al., 2015, p. 64). For adult learners, understanding the value in a learning task can be as important as the new learning (Cochran, & Brown, 2016; Storey & Wang, 2017). Knowles et al. (2015) found that adult learners will investigate both the benefits and consequences of learning, or not learning, before committing to learning. Facilitators of adult learning can improve receptivity to learning by first emphasizing the value and reason for the need to know before learning begins (Knowles et al., 2015).

Learners' readiness to learn. Adults are motivated to learn when the result will serve an immediate need or "help them cope effectively with their real-life situations" (Knowles et al., 2015, p. 67). The readiness to learn principle is often engaged when a need for change is immediate (Cochran, & Brown, 2016). Knowles et al. (2015) proposed that the readiness to learn for adult learners was frequently triggered when learners were prepared to move "from one developmental stage to the next" (p. 67). In the context of professional development that supports the adoption of blended learning practices, a need for change in instructional strategies is clear when the benefits of blended learning are presented, thus the environment for a readiness to learn is created.

Learners' self-concept. The principle of learners' self-concept portrays adult learners as "being responsible for their own decisions, for their own lives" (Knowles et al., 2015, p. 65). As individuals mature, self-concept shifts from dependence to self-directed (Merriam, 2017). As independent learners, able to self-direct, adults "resent and resist situations in which they feel others are imposing their wills on them" (Knowles et al., 2015, p. 65). Adults, as self-directed learners, may resist professional development

opportunities as they perceive their own learning desires are being circumvented by facilitators trying to enforce their own will (Knowles et al., 2015; Storey & Wang, 2017). Learning opportunities that encourage collaboration and recognize the capabilities of the adults participating in the learning activity minimize resistance to learning (Cochran, & Brown, 2016; Knowles et al., 2015).

Learners' experiences. Unlike children, adult learners have amassed both more and varied experiences, which have profound ramifications for adult learning (Knowles et al., 2015). Because of their unique lived experiences, adults participating in professional development need their experiences acknowledged by those providing training (Knowles et al., 2015). Opportunities for learners to share their experiences, collaborate on projects, reflect on personal experiences, and engage in peer-to-peer discussions validates the lived experiences of adults (Cochran, & Brown, 2016; Knowles et al., 2015; Shi, 2017). Knowles et al. (2015) recognized "to children, experience is something that happens to them; to adults, experience is who they are" (p. 66). Ignoring the experiences of adults, participating in professional development courses, can be perceived by participants as not only a rejection of their experiences, but as a rejection of themselves (Knowles et al., 2015).

Learners' orientation to learning. As individuals mature, the application of knowledge centers on the immediate use of knowledge, rather than future application (Merriam, 2017). Thus, adult learning has a problem-centered orientation, focused on finding solutions to immediate needs, while traditional youth learning has a subject-centered orientation (Knowles et al., 2015). Adults are oriented to learning when they perceive the learning will "help them perform tasks or deal with problems that they

confront in their life situations" (Knowles et al., 2015, p. 67). Adult learning theorists recommend professional development providers engage adult learners in authentic learning activities that promote application and context to everyday situations (Cochran, & Brown, 2016; Knowles et al., 2015; Storey & Wang, 2017).

Learners' motivation. Although adults are motivated by external forces such as job promotions and increases in salary, Knowles et al. (2015) maintain internal motivation is a far more powerful force. Adult learners tend to be intrinsically motivated by factors such as the desire to develop professionally or to gain a greater quality of life (Knowles et al., 2015). Experiments conducted by Ryan and Deci (2017) demonstrated the power of intrinsic motivation and led to the development of self-determination theory. Proponents of self-determination theory advocate that adults are motivated by a "natural tendency toward growth and development" (Ryan and Deci, 2017, p. 8), grounded in autonomy, competence, and relatedness, which are appropriate to adult learning theory (Ryan and Deci, 2017).

Blended Learning

Blended learning refers to any instructional model that combines online learning with face-to-face learning, typically containing both synchronous (multi-student, real-time engagement) and asynchronous (independent learner engagement) learning environments (Alvarado-Alcantar et al., 2018; Dziuban et al., 2018; Horn & Staker, 2011; Horn & Staker, 2015; Moore et al., 2017; Shand & Glassett Farrelly, 2017; Spring & Graham, 2017; Vaughan et al., 2017). The growth of blended learning was driven by better access to technology (Anagün, 2018), demands for greater school accountability (Molnar et al., 2017) and improved instructional practices that emphasized

communication, collaboration, critical thinking, and creativity (Horn & Staker, 2011; Moore et al., 2017). Between 2002 and 2010, the United States experienced a 500% increase in blended learning k-12 enrollments (Alvarado-Alcantar et al., 2018, p. 174). American high school blended learning course enrollment continued to grow annually (Foulger et al., 2017; Gurley, 2018; Molnar et al., 2019).

Blended learning terminology. There is little debate over the definition of the terms "face-to-face learning" and "online learning;" however, the definition of the term "blended learning" has changed over time (Nortvig, Petersen, & Balle, 2018). Before the proliferation of technology integration in education, blended learning referred to educational practices that used multiple instructional strategies or theories to support learning, absent of technology (Torrisi-Steele, 2011). As e-learning, or online learning, was embraced as a method for supporting face-to-face instruction (Nortvig et al., 2018), definitions of blended learning shifted to emphasize learning environments that combined face-to-face teaching and online learning (Torrisi-Steele, 2011). The generally accepted definition of blended learning (Nortvig et al., 2018) is a combination of face-to-face class time and online learning within the same course (Gurley, 2018). However, the term blended learning is often misunderstood by teachers, and the lack of a standard definition is prevalent among teachers (Gurley, 2018; Vaughan et al., 2017). Riel et al. (2016) argued teachers' perspectives about misinterpretations regarding terminology and blended learning pedagogy need to be considered during all phases of adoption of the practice.

Gurley (2018) defined blended learning as the integration of face-to-face and online learning, "with at least 30% to 79% of the course materials and activities delivered

online" (p. 200). Alternatively, Nortvig et al. (2018) defined blended learning as any course having "50% of total course time dedicated to F2F [face-to-face] instruction" (p. 48). Horn and Staker (2011) offered a definition of blended learning free of the constraints of specific time spent online or in a face-to-face classroom setting. "Blended learning is any time a student learns in part at a supervised brick-and-mortar location away from home *and* at least in part through online delivery with some element of student control over time, place, path, and/or pace" (Horn & Staker, 2011, p. 3). In contrast to blended learning, courses are considered "online courses" when 80% of instruction and course content are delivered and completed online (Gurley, 2018, p. 200).

Most discrepancies over the definition of blended learning centered primarily around the "amount of seat time, the proportion of online learning to face-to-face instruction, and the quality of the educational experience" (Spring & Graham, 2017, p. 338). Dziuban et al. (2018) suggested "definitional ambiguity" (p. 1), regarding blended learning terminology, limits the effectiveness of blended learning professional development and adoption of blended learning practices (Parks et al., 2016; Vaughan et al., 2017). Spring and Graham (2017) encouraged broad definitions of blended learning to allow for greater variation and individualization of instruction but encouraged institutional or district definitional agreement. Halverson and Graham (2019) suggested moving beyond blended learning's face-to-face and online features and instead focusing definitional attention on "pedagogical features" (p. 146) might prove more effective for supporting teachers' blended learning instruction.

A key definitional element of blended learning is the emphasis placed on student control over time, pace, place, and path of learning (Halverson & Graham, 2019; Horn &

Staker, 2015). Unlike traditional modes of instructional delivery, blended learning is grounded in the idea of students regulating their own learning through control of the time they learn online, the pace at which they learn online, the physical location they want to complete online learning from, and the online path they select to learn about a concept (Horn & Staker, 2015). Parks et al. (2016) recommended definitional discussions of blended learning should include student choice and independence.

Many teachers believed blended learning was achieved by merely adding technology to face-to-face courses (Vaughan et al., 2017). Often confused, one-to-one device programs are not synonymous with blended learning (Horn & Staker, 2015). One-to-one programs can support technology-rich instruction, however, the use of a device to access technology tools such as websites, online textbooks, document readers, online word processing tools, and digital tools to enhance content delivered by a teacher, does not allow students to control the time, pace, place, and path of their learning (Horn & Staker, 2015). Simply implementing a one-to-one device program, or creating technology-rich instruction does not equate to blended learning (Moore et al., 2017; Vaughan et al., 2017).

Blended learning benefits. Horn and Freeland-Fisher (2017) noted the benefits of blended learning such as faster and more meaningful data collection, accelerated learning, personalization, and more time for teachers to engage students one on one, but advised integration of blended learning courses should be done intentionally and slowly. Vaughan et al. (2017) found teachers in schools that offered blended courses often placed greater overall emphasis on the teaching and learning process, as well as increased attentiveness to general pedagogical methods. Blended learning was also shown to

support student-centered classrooms that allowed for student choice of what to study, how to study, and the pace of study (Halverson & Graham, 2019; Horn & Staker, 2015; Moore et al., 2017; Shand & Glassett Farrelly, 2017). Researchers found students enrolled in blended learning courses in India and England, tended to demonstrate improved communication skills and greater motivation and responsibility for their own learning (Lalima & Dangwal, 2017).

A benefit of blended learning recurrent in the literature is the flexibility it offers students and teachers (Halverson & Graham, 2019; Horn & Staker, 2015; Shand & Glassett Farrelly, 2018). Analysis of previous studies indicated both higher education and secondary students ranked flexibility in determining when, where, and how they would complete their school work high among the benefits of blended learning (Jdaitawi, 2019; Shand & Glassett Farrelly, 2018; U.S. Department of Education, 2017). Borup and Stevens (2016) found teachers identified the flexibility of teaching when, where, and how they taught as a benefit of blended learning. The flexibility of scheduling (Daum & Buschner, 2018), instructional design (Horn & Staker, 2015), and resource selection and distribution (Halverson & Graham, 2019) were important benefits of blended learning to teachers.

A growing body of literature (Black & Thompson, 2018; Pytash, 2018; Repetto, Spitler, & Cox, 2018; Rice & Dykman, 2018) indicated blended learning offered instructional support to traditionally marginalized student populations (Archambault et al., 2016; Lalima & Dangwal, 2017). For students unable to physically or emotionally attend a traditional school, blended learning provided a learning platform for reaching students where they were (Lalima & Dangwal, 2017). Researchers Lalima and Dangwal,

(2017), emphasized that "if people cannot reach school, schools should reach them" (Lalima & Dangwal, 2017, p. 130). Research on blended learning's effective influence on academic achievement for students with severe health issues (Black & Thompson, 2018), students at-risk (Pytash, 2018; Repetto et al., 2018), and students under long term incarceration (Pytash, 2018; National Technical Assistance Center for the Education of Neglected or Delinquent Children and Youth (NDTAC), 2018) was limited, however, available studies showed favorable learning outcomes were achieved (Archambault et al., 2016).

Black and Thompson (2018) proposed that students with severe health impairments often struggled to conform to traditional school calendars due to consistent absences. Several principles of blended learning such as flexible due dates, pace of study, individualized learning, and collaborative learning support an adaptive learning environment required for many students with severe health impairments (Archambault et al., 2016; Black & Thompson, 2018). Homebound and hospitalized students traditionally received less academic support than their peers, however, blended learning instruction, when paired with a qualified instructor, showed promising results when measured against face-to-face only instruction (Barbour, et al., 2011; Black & Thompson, 2018). Although research focused on blended learning and students with severe health impairments provided promising evidence that the instructional practice supported the learning needs of homebound and hospitalized students (Barbour, et al., 2011), Black and Thompson (2018) cautioned more research on the topic was necessary.

Although the overall dropout rate for American high school students in 2017 was 5.4% (U.S. Department of Education, 2019), few studies focused on the benefits of

blended learning for students who were at-risk, incarcerated, or detained (Pytash, 2018; Repetto et al., 2018). Analysis of the available research, however, yields favorable benefits derived from blended learning for students who were at-risk (Repetto et al., 2018). Repetto et al. (2018) found both blended and online programs offered a viable alternative for students preparing to dropout or who have dropped out of school. For students who struggled to learn in traditional school environments, alternative schools, employing blended formats that offered credit recovery and credit acquisition, indicated encouraging results for reducing dropout rates (Repetto et al., 2018). Repetto et al. (2018) cautioned that for all of the benefits blended learning offered students classified as at-risk, far more research, particularly longitudinal studies that investigate post-high school outcomes, were needed.

Juvenile correction leaders, who recognized incarcerated and detained juveniles had the "right to a publicly funded education" (Pytash, 2018, p. 183), increasingly turned to online and blended learning (NDTAC, 2018) to meet the challenges of providing an education to the 43,580 juveniles incarcerated in American correctional facilitates in 2017 (U.S. Department of Justice, 2018). Pytash (2018) found that although most juvenile correctional facilities continued to rely on online learning to strengthen students' basic skills, a growing number of states recognized (NDTAC, 2018) the innovative and engaging benefits of blended learning for incarcerated and detained juveniles. The Kentucky Department of Juvenile Justice's Adair Youth Development Center, recognized as a model for the implementation of blended learning with incarcerated juveniles, turned to blended learning to individualize student learning, promote choice in learning styles, promote digital citizenship, and build technology skills (NDTAC, 2018).

Blended learning challenges. A number of researchers (Alvarado-Alcantar et al., 2018; Black & Thompson, 2018; Halverson & Graham, 2019; Moore et al., 2017; Rice & Dykman, 2018; Shand & Glassett Farrelly, 2017; Vaughan et al., 2017) recognized teachers and students encountered several challenges associated with blended learning that limited the effectiveness of the instructional model. Blended learning challenges commonly reported in the literature included the amount of time required for teachers and students to learn new technology (Shand & Glassett Farrelly, 2017), dynamic shifts in pedagogical practices (Linder, 2017), few pre-service teacher preparation programs that included blended learning training (Shand & Glassett Farrelly, 2018), poorly executed delivery and design methods (Shand & Glassett Farrelly, 2017), and limited access to technology and the internet outside of school (Rice & Dykman, 2018). In addition, the findings of Vaughan et al.'s (2017) comprehensive research on blended learning revealed several prominent challenges associated with blended learning such as time for training, financial constraints, lack of institutional vision, limited professional development, low technology skills, minimal understanding of terminology, and the difficulty teachers regularly experienced transitioning to the role of "facilitator and designer rather than on just being a content provider in a blended course" (p. 107).

Challenges to blended learning such as technology resources, implementation, training, design, and understanding of theory continued to be acknowledged by researchers as key barriers to fulfilling blended learning's potential (Arnesen, Hveem, Short, West, & Barbour, 2018; Alvarado-Alcantar et al., 2018; Black & Thompson, 2018; Halverson & Graham, 2019; Moore et al., 2017; Rice & Dykman, 2018; Shand & Glassett Farrelly, 2017; Vaughan et al., 2017). Rice and Skelcher (2018), however,

emphasized that limited education policy and legislation at the state and federal level also presented a challenge to successful blended learning practices. Due to the rapid pace of both technology adoption and the implementation of blended learning, policy makers struggled to enact policy that kept pace with blended learning's growth (Rice & Skelcher, 2018). As a disrupter of traditional education (Horn and Staker, 2015), the use of blended learning forced policy makers to address issues of attendance when students were learning away from school, accountability in the form of new standards meant to address online learning, equal access to high quality education, funding of technology resources, and changes to teacher preparedness courses that included blended and online learning competencies (Rice & Skelcher, 2018; Shand & Glassett Farrelly, 2017).

An analysis of thematic patterns in blended learning literature (Spring & Graham, 2017) revealed 42.1% (p. 347) of the top cited articles about blended learning focused on learner outcomes, however, relatively few studies have been published about learner outcomes for students with disabilities (Alvarado-Alcantar et al., 2018; Rice & Dykman, 2018). In their review of the literature devoted to blended learning and students with disabilities, Rice and Dykman (2018) noted challenges such as adherence to allowable IEP accommodations, support for teachers designing blended environments for students with disabilities, use of improper instructional materials for online learning, and limited state policy that guided blended learning. Although challenges are evident for students with disabilities in blended environments (Alvarado-Alcantar et al., 2018), further research is needed to better understand the effects of blended learning on students with disabilities (Pytash, 2018; Rice & Dykman, 2018; Spring & Graham, 2017).

Blended learning models. Horn and Staker (2011) found that blended learning

programs varied greatly in terms of how students received instruction. Six early blended learning models were recognized based on the diverse instructional influences Horn and Staker (2011) identified including "teacher roles, scheduling, physical space, and delivery methods" (p. 4). The six original blended learning models included face-to-face driver, rotation, flex, online lab, self-blend (a la carte), and online driver (enriched virtual) (Horn & Staker, 2011; Horn & Staker, 2015, White, 2019c) (see Table 2).

Table 2

The Six Early Blended Learning Models

Model	Characteristics
Face-to-face driver	The teacher is still the primary deliverer of content. Online learning is used to support struggling students (Horn & Staker, 2011).
Rotation	Students rotate between various learning methods, including small group, online, and independent work, on a teacher prescribed schedule (Horn & Staker, 2015; White, 2019a).
Flex	Content is delivered through online modes with a teacher available to "provide support and instruction on a flexible, as-needed basis while students work through course curriculum and content" (Christensen Institute, 2019, para. 1).
Online lab	Often under the supervision of a non-certified teacher, students meet in a computer lab for a defined period of time during the day (Horn & Staker, 2015).
Self-blend (a la cart)	Students elect to take an online course outside of the regular school day, in addition to their traditional courses (Horn & Staker, 2011).
Online driver (enriched virtual)	All instruction is delivered online with students physically checking in face-to-face with a teacher only occasionally (Horn & Staker, 2011).

In addition to the six early models identified by Horn and Staker (2011), additional blended learning models emerged over the past decade including station rotation, lab rotation, individual rotation, and flipped classes (Jdaitawi, 2019; Horn & Staker, 2015; Stover & Houston, 2019; White, 2018; White, 2019c) (see Table 3).

Table 3

Emergent Blended Learning Models

Model	Characteristics
Station rotation	Similar to the rotation model, students rotate between learning stations in the classroom working in small groups, face-to-face with the teacher, and self-directed online learning (Horn & Staker, 2015; White, 2019a). An emphasis is placed on the teacher's use of data, derived from online learning tools to place students in specific groupings (White, 2019a).
Lab rotation	Within the same class period, students spend part of their class time in face-to-face instruction and part of their class time learning online in a computer lab (Horn & Staker, 2015; White, 2019b).
Individual Rotation	Students rotate between learning platforms based on an individual schedule generated by the teacher or digital algorithm (Horn & Staker, 2015).
Flipped class	Prior to attending class, students learn foundational material, often at home the previous night through a video lesson created by the teacher (Bergmann, 2017). Class time is used for collaborative learning, projects, and small groups (Horn & Staker, 2015).

Blended learning implementation and integration. Responding to lagging test scores, minimally engaged students, and rapidly changing state and national standards, school leaders often turned to technology only to find the technology fix they implemented failed (Horn & Freeland-Fisher, 2017; Kieschnick, 2017). The failure of

technology was commonly found in the practitioner's desire to place the use of technology ahead of sound instructional practice and access to adequate professional development (Kieschnick, 2017; Moore et al., 2017; Spring & Graham, 2017). Vaughan et al. (2017) advised blended learning implementation should be embedded in a clear integration framework to support teachers' understanding of blended learning integration goals. Kieschnick (2017) also suggested adopters of new technology integration should start slow, but added "powerful instruction has always been and will always be about relationships" (p. 24). Teachers needed to have the tools and training to be able to prioritize what technology works in the classroom and not waste "time on haphazard technology integration" (Kieschnick, 2017, p. 13). Moore et al. (2017) argued technology implementation and integration must be strategic and purposeful and it must meet established goals. To ensure educators focus on strategic integration of technology, they must "prioritize learning and growth over hype and trend" (Kieschnick, 2017, p. xviii) and adopt a shared understanding and vision (Vaughan et al. 2017).

There exists a considerable body of literature on the importance of incorporating technology integration frameworks within the implementation process (Kieschnick, 2017; Kimmons & Hall, 2018), however few implementation guides exist (Adelstein & Barbour, 2017; Harvey & Caro, 2017). Kimmons and Hall (2018) concluded there were several theoretical frameworks to support integration; however, most frameworks were adopted by teachers or implementation planners with little critical evaluation. Prominent technology integration models include the Substitution Augmentation Modification Redefinition (SAMR) model (Kimmons & Hall, 2018), the Technological, Pedagogical, and Content Knowledge (TPACK) framework (Harvey & Caro, 2017); the Replacement

Amplification, and Transformation Model (RAT) (Hughes, 2016); the Technology Integration Matrix (TIM) (Kimmons & Hall, 2018); and the Technology Adoption Model (TAM) (Adam, 2017) (see Table 4).

Table 4

Technology Integration Frameworks

Technology Integration Frameworks	Characteristics
Substitution Augmentation Modification Redefinition (SAMR)	Identifies teachers' level of technology integration through four phases of integration, that guide instructional practices from simple substitution of materials to complete redefinitions of learning tasks (Kimmons, n.d.).
Replacement Amplification, and Transformation Model (RAT)	Similar to SAMR, identifies teachers' level of technology integration through three phases of deeper integration, that guide instructional practices from simple substitution of materials to complete transformations of learning tasks (Hughes, 2016).
Technological, Pedagogical, and Content Knowledge (TPACK)	Emphasizes the equal interplay "between technological knowledge, pedagogical knowledge, and content knowledge" (Adam, 2017) that moves practitioners to consider how the three knowledge bases work in unison when integrating technology (Kimmons, n.d.).
Technology Adoption Model (TAM)	Adoption of technology is predicated on usefulness and ease of use for the teacher, thus an understanding of how the technology being integrated supports pedagogical practices in meaningful ways is underscored (Adam, 2017).
Technology Integration Matrix (TIM)	A matrix of 25 cells that "incorporates five interdependent characteristics of meaningful learning environments: active, collaborative, constructive, authentic, and goal-directed. These characteristics are associated with five levels of technology integration: entry, adoption, adaptation, infusion, and transformation" (Florida Center for Instructional Technology, 2019, para.1).

When integrating blended learning, teachers' attitudes about technology integration had a considerable effect on the success of the integration (Claro, Nussbaum, López, & Contardo, 2017; Lawrence & Tar, 2018; Monacis, Limone, Ceglie, Tanucci, & Sinatra, 2019). Monacis et al. (2019) recognized technology integration could be vulnerable to "first-order barriers, which are extrinsic to teachers" (p. 280) such as access to technology, time, and support and "second-order barriers [that] are intrinsic to teachers and compromise pedagogical and technology beliefs and willingness to change" (p. 280). Claro et al., (2017) found that integration was generally more successful when teachers' views about integration were positive. However, when teachers, who as adult learners were driven by internal forces rather than external forces (Knowles et al., 2015), perceived technology integration was forced on them, the integration process often failed (Monacis et al, 2019). Additionally, when teachers perceived that technology integration had little value, adoption of technology-based learning showed limited success (Lawrence & Tar, 2018). Identifying the value of technology integration to pedagogical practices (Monacis et al, 2019) supported teachers' need to know why they were learning something (Knowles et al., 2015).

Professional Development

A closer look at the literature on high school blended learning professional development revealed a number of gaps and shortcomings (Gurley, 2018; Halverson et al., 2017; Shand & Glassett Farrelly, 2017; Vaughan et al., 2017). Previous studies on blended learning professional development have almost exclusively focused on the development of faculty at international institutions of higher education (Moore et al., 2017; Spring & Graham, 2017). Few studies reflected current methods of blended

learning professional development for high school teachers, and fewer studies focused on how blended learning terminology influenced instruction and guided professional development planning (Moore et al., 2017). Despite numerous models and frameworks developed to provide standards by which to evaluate teachers' integration of blended learning (Spring & Graham, 2017), research is still needed to gauge the effectiveness of the professional development being provided to high school teachers (Halverson et al., 2017).

In her analysis of teachers' perceptions of their own professional development needs, Wehbe (2019) concluded, regardless of the purpose of the professional development, planners should consider teachers' needs and experiences when planning professional development. Similarly, Parks et al. (2016) identified the importance of incorporating teachers' needs and added blended learning professional development should be research-based, ongoing, modeled, relevant, and long lasting. Effective blended learning professional development combined elements from technology, pedagogy, and content training (Shand & Glassett Farrelly, 2017). In the broad study of professional development for k-12 online teachers, Dawson and Fitchtman Dana (2018) established that blended learning professional development should highlight the fundamental best practices common to traditional professional development with "additional considerations" (p. 253). Additional considerations to blended learning professional development included alignment to standards for online and blended teaching (Dawson & Fitchtman Dana, 2018), active learning (Halverson et al., 2017; Parks et al., 2016) and increased time for teacher learning due to the technological elements related to blended teaching and learning (Dawson & Fitchtman Dana, 2018).

Ultimately, high quality blended learning professional development addressed instructional changes, practitioners' needs, fears and concerns, technology competences, and reasons for resistance to change (Halverson et al., 2017; Lawrence & Tar, 2018).

Pre-service teacher professional development. Review of the literature regarding blended learning professional development revealed few teacher education programs were preparing teachers to teach online and blended learning courses (Dawson & Fitchtman Dana, 2018; Moore et al., 2017; Shand & Glassett Farrelly, 2017). While calls for school reform (Molnar et al., 2017; Moore et al., 2017) and the growth of technology (Foulger et al., 2017) led to substantial increases in the number of blended learning courses in America's schools (Gurley, 2018), teacher education programs have not evolved to meet the new pedagogical demands blended learning places on teachers. (Dawson & Fitchtman Dana, 2018).

Moore et al. (2017) acknowledged most teacher certification programs only minimally supported pre-service teachers' blended learning knowledge through "passive" (p. 149) participation in blended learning training. Pre-service teacher programs that integrated blended design, structured around blended strategies such as clear expectations, tutorials, frameworks, and best practices, were beneficial to pre-service teachers' understanding of blended learning (Shand & Glassett Farrelly, 2017). Early and regular pre-service teacher exposure to online and blended learning models reinforced later in-service blended instruction (Luo, Hibbard, Franklin, &, Moore, 2017), however, pre-service teachers often reported few opportunities for field experiences or courses that included instruction on blended learning (Archambault et al., 2016).

As the demand for online and blended courses continues to grow (Alvarado-Alcantar et al., 2018; Foulger et al., 2017), teacher preparation programs need to adopt new methods of preparing pre-service teachers to teach in non-traditional systems (Dawson & Fitchtman Dana, 2018). Shand and Glassett Farrelly (2017) found pre-service teachers who participated as students in a blended course reported being more prepared to teach through blended methods. Exposure to blended learning as a pre-service teacher also changed teacher candidates' perceptions positively about the value of blended learning (Luo et al., 2017). Pre-service teachers who were actively engaged in blended learning through the creation of online and face-to-face content (Moore et al. 2017) described feeling empowered to engage their own students through blended methods (Dawson & Fitchtman Dana, 2018). Teacher preparation programs that included blended experiences prepared pre-service teachers "to understand first-hand the benefits and challenges of such an instructional design" (Shand & Glassett Farrelly, 2018, para. 2). In their study of the effect of the use of a blended instructional methods course for pre-service teachers' understanding of blended learning, Shand and Glassett Farrelly (2017) concluded pre-service teachers who engaged in blended learning courses were better prepared to recognize both the opportunities and challenges unique to blended learning.

In-service teacher professional development. There exists a considerable body of literature concerning the limited number of professional development programs that support teachers teaching through blended learning (Halverson et al., 2017; Shand & Glassett Farrelly, 2017). Although the number of high school blended learning courses increased annually since 2002 (Alvarado-Alcantar et al., 2018), Christensen et al. (2017)

indicated blended learning professional development had not expanded at the same rate as blended course growth. Archambault et al. (2016) found in 2016, only 4.1% (p. 321) of teachers received training for teaching online courses. Few in-service teachers who engaged in blended practices were supported through professional development (Archambault et al., 2016). When teachers were not provided district sponsored professional development, "teachers were left to find their own professional development opportunities" (Moore et al., 2017, p. 148). Limited professional development amplified misunderstandings about blended learning terminology and hindered the adoption and effectiveness of blended learning (Parks et al., 2016; Vaughan et al., 2017).

The correct type and amount of professional development provided for teachers to prepare them to teach in blended environments showed a direct correlation to the success of the blended program (Gurley, 2018). Technology integration was a common professional development theme provided to teachers (Rotermund, DeRoche, & Ottem, 2017); however, "simply providing teachers with professional development opportunities related to using technology does not translate into higher levels of integration in the classroom" (Harrell & Bynum, 2018, p. 14). Parks et al. (2016) found most secondary professional development programs focused on the use of technology and failed to connect pedagogical shifts required of teachers when moving from traditional to blended practices. Professional development that addressed technology, in concert with pedagogy and content knowledge, proved more beneficial to teachers' understanding of blended learning than professional development that only included technology (Williams, 2017).

The results of several studies (Archambault et al., 2016; Dawson & Fitchtman Dana, 2018; Halverson et al., 2017; Parks et al., 2016) indicated in-service professional

development that modeled blended learning and allowed teachers to engage in blended learning themselves created "a sense of empathy for their students as they engaged in new ways of learning" (Parks et al., 2016, p. 86). Dawson & Fitchman Dana (2018) promoted the use of "active learning" (p. 251) to engage teachers in a variety of interactive blended scenarios that moved teachers beyond the mere attainment of technology skills (Gurley, 2018), but also included pedagogical best practices (Parks et al., 2016). Teachers apprehensive about using and managing technology in the classroom (Harrell & Bynum, 2018), also benefited from professional development that incorporated modeling (Parks et al., 2016). Professional development in which both the management and use of technology were modeled, supported teachers' self-efficacy and promoted long-term and meaningful application of technology resources (Harrell & Bynum, 2018).

Summary

A review of the literature related to adult learning theory, blended learning, and professional development was presented in Chapter Two. An extensive examination of the literature related to adult learning theory, the theoretical framework that directed this study, was provided. In addition, the six principles of adult learning theory were examined in relation to professional development that supported teachers' adoption of blended learning. Literature dedicated to blended learning terminology, the benefits and challenges of blended instruction, and the integration and implementation of blended courses was considered. A review of studies focused on pre-service and in-service teacher blended learning professional development concluded the literature review.

In Chapter Three, the methodology for the study is examined. A brief overview of the problem and purpose of the study is presented, accompanied by a review of the research questions. An examination of the mixed method research design is also provided. The population and sample are outlined, and the instruments used in the study are explained. Data collection and analysis methodologies are described, and ethical considerations are presented. Chapter Three concludes with a chapter summary.

Chapter Three: Methodology

In this chapter, the methodology to obtain and analyze teachers' perceptions of blended learning professional development is described. An overview of the problem and purpose of the study is also provided, along with a review of the research design and process for selecting the population and sample participants. Furthermore, reliability and validity of the survey instrument and interview questions are examined, and data collection techniques used in the study will be evaluated. Lastly, analysis of data and ethical considerations are described.

Problem and Purpose Overview

The growth of technology and calls for greater national school accountability led to widespread use of blended learning instructional practices (Gurley, 2018; Molnar et al. 2017; Moore et al., 2017). Since 2005, the number of high school students enrolled in courses that incorporated a form of blended learning rose annually (Foulger et al., 2017; Gurley, 2018; Molnar et al., 2017). The problem is professional development that supported teachers' implementation and use of blended learning was not positively correlated with blended learning's prolific growth (Kieschnick, 2017; Moore et al., 2017). Moreover, the term "blended learning" was often misunderstood by teachers and the exclusion of clearly defined blended learning terminology limited educators' abilities to fully adopt quality blended learning practices (Gurley, 2018; Vaughan et al., 2017). The purpose of this phenomenological study was to determine if there was widespread understanding of the term "blended learning" among secondary teachers and how previous professional development experiences shaped the knowledge of the definition and practice of blended learning.

Research questions. The following questions guided this study:

1. What do high school teachers perceive as the definition of blended learning?
2. What are high school teachers' perceptions of previous professional development experiences that support blended learning instruction?
3. What future professional development would high school teachers perceive as supportive to their practice of blended learning in the classroom?

Research Design

A mixed methods design was appropriate to investigate teachers' perceptions of blended learning terminology and professional development (Creswell & Creswell, 2018). Guided by the research questions, mixed methods research incorporated both quantitative and qualitative research procedures to better understand the phenomenon being studied (Mills & Gay, 2018). According to Creswell and Creswell (2018), the integrating of data, collected through mixed methods research, provided deeper insight into a problem than would otherwise be found by only using quantitative or qualitative research methods.

An explanatory sequential mixed methods design was the specific mixed methods strategy used in this study (Creswell & Creswell, 2018). An explanatory sequential mixed methods approach involved a two-phase process of data collection (Creswell & Plano Clark, 2017; Mills & Gay, 2018). The first phase involved quantitative data collection, while the second phase involved qualitative data collection (Creswell & Creswell, 2018). Quantitative data, collected using a survey in phase one, was used to inform the creation of the interview questions for phase two of the study (Creswell & Creswell, 2018). By relying on data from phase one to inform the interview questions in

phase two, a deeper exploration of the responses provided by participants in phase one was achieved (Creswell & Creswell, 2018; Creswell & Plano Clark, 2017).

Population and Sample

Participants in this study, the sample, belonged to the "research population, which is the group of individuals having one or more characteristics of interest" (Asiamah, Mensah, & Oteng-Abayie, 2017). The population represented by this research shared the characteristic of high school teacher in Missouri. Due to strategic and resource limitations, a target population was identified. A "target population is determined by using selection criteria that uncover the most eligible potential participants" (Asiamah, Mensah, & Oteng-Abayie, 2017). The target population criteria were established as high school teachers, currently teaching, in Southwest Missouri.

The sample for this study consisted of 154 Missouri high school teachers recruited from four high schools in Southwest Missouri. Each of the four high schools selected had offered professional development, focused on blended learning, during the 24 months prior to data collection for this study. The four high schools were also selected to ensure diversity among the sample population due to the varying student enrollment and faculty size of each school. By selecting a mix of rural, suburban, and semi-urban schools, the sample was a more accurate representation of the population. Additionally, the four high schools were selected for this study because the quality and frequency of blended learning professional development was often predicated on the size of the school in which the professional learning occurred (Parks et al., 2016). High school one had an enrollment of 158 students and 16 teacher full time equivalencies (FTEs). High school two had an enrollment of 198 students and 17 teacher FTEs. High school three had an

enrollment of 454 students and 37 teacher FTEs. High school four had an enrollment of 1,423 students and 84 teacher FTEs (Missouri Department of Elementary and Secondary Education, 2018).

Purposive sampling was used to select the participants from the population. A purposive sample was selected for this study since the sample could be logically assumed to represent the population (Sharma, 2017). The sample size ranged from 30 to 154 teachers who represented the unit of analysis. The specific purposive sample used in this study was a homogeneous sample since all of the participants had the same occupation (Sharma, 2017). A key advantage to applying purposive sampling was time-efficiency (Mills & Gay, 2018). Disadvantages associated with purposive sampling, however, were the inability to precisely generalize research findings and researcher bias (Mills & Gay, 2018; Sharma, 2017). Purposive sampling disadvantages were diminished in this study since the sample was derived from a homogeneous population whose criteria for study was established by licensure requirements associated with the populations' occupation (Mills & Gay, 2018).

Instrumentation

An online survey (see Appendix A) was created by the researcher to collect quantitative data during the first phase of the study. The cross-sectional survey contained 19 interval/rating/continuous scale (Likert-type scale) questions and one open-ended question and was intended to measure teachers' perceptions about their blended learning experiences (Creswell & Creswell, 2018; Fink, 2017). Using the three research questions to guide development, the 19 survey statements and one open-ended question were constructed to support a mixed methods approach through the integration of quantitative

and qualitative data. (Creswell & Creswell, 2018). A survey was selected for the first phase of the study because, according to Fink (2017), data collected using surveys can "describe, compare, or explain individual and societal knowledge, feelings, values, preferences, and behavior" (p. 2).

The first section of the survey was developed to answer Research Question (RQ) 1. The nine statements in the first section of the survey were designed to address high school teachers' perceptions of the definition of blended learning. The second section of the survey was developed to answer RQ 2. The six statements in the second section of the survey captured participant perceptions of previous professional development experiences that supported blended learning instruction. The third section of the survey was developed to answer RQ 3. The five statements that completed the survey were included to determine future professional development high school teachers perceived as supportive to their practice of blended learning in the classroom.

A pilot test of the survey was conducted on three separate occasions. The first pilot test of the survey was taken by 36 teachers with similar characteristics to the participants in the study. A pilot test was conducted to identify problems with the administration, organization, and content of the survey (Fink, 2017). Following the first pilot test, modifications were made to the instrument to more closely align the survey with the three research questions to bring greater validity to the survey and make the survey statements more concise (Fink, 2017). After modifications were made to the survey following the first pilot test, a second pilot test of the survey was taken by 26 teachers with similar characteristics to the participants in the study but who were not included in the first pilot test. A third pilot test of the survey was taken by 21 of the 26

second pilot test participants to assure test-retest reliability (Creswell & Creswell, 2018; Fink, 2017). By pilot testing the modified survey instrument twice, the stability of the survey scale was demonstrated as reliable over multiple applications of the survey (Creswell & Creswell, 2018). Along with demonstrating where modifications were warranted in the survey instrument, the three pilot tests allowed the opportunity to test data processing procedures including coding and analysis (Fink, 2017; Ngozwana, 2018).

Seven original interview questions were developed to elicit qualitative data during the second phase of the study. In line with phenomenological research, the open-ended interview questions were created to stimulate deeper discussions about the blended learning experiences of participants (Creswell & Creswell, 2018; Qutoshi, 2018). The one-on-one interview questions were generated from survey responses provided in phase one of the study (Mills & Gay, 2018). The interview questions were field tested with teachers not participating in the study and modifications were made to the interview questions (Mills & Gay, 2018). Furthermore, an interview guide (see Appendix B) was created to assure each open-ended question asked during the interview related to a research question, each participant was asked the same questions, and questions were asked in the same order (Mills & Gay, 2018; Ngozwana, 2018). Demographic information including name, years of service in education, and primary content area was collected at the beginning of each interview.

If the survey and interview results were to provide valuable data for interpretation, the instrumentation had to be both reliable and valid (Creswell & Creswell, 2018; Mills & Gay, 2018; Mohajan, 2017). Creswell and Creswell (2018) described reliability as the “consistency or repeatability of an instrument” (p. 154). Through pilot

testing and test-retesting, typical threats to instrument reliability such as ambiguous questions or statements, disordered questions or statements, unclear instructions, or excessively long surveys were minimized (Mohajan, 2017).

According to Mills and Gay (2018), "validity refers to the degree to which a test measures what it is supposed to measure" (p. 160). Through pilot tests of the survey, several factors that threatened quantitative validity, such as unclear directions and survey questions that did not align with the research questions, were removed (Mills & Gay, 2018). Validity was brought to the interview questions through triangulation of data (Creswell & Creswell, 2018). Using triangulation, qualitative validity was heightened by justifying themes found in data from multiple participant perspectives (Creswell & Creswell, 2018; Mills & Gay, 2018). Further validity was brought to the interview data by allowing each participant to review his or her individual interview transcript and comment before the transcript was finalized (Creswell & Creswell, 2018).

Data Collection

A request to conduct research (see Appendix C) was sent via email to the superintendents of the four school districts targeted for study. Once approval to conduct the study from the Lindenwood University Institutional Review Board (see Appendix D) and district superintendents (see Appendix E) was obtained, principals of the four high schools targeted for study were asked to forward an email to high school teachers explaining the purpose of the research and an invitation to participate (see Appendix F) in the Blended Learning Experience Survey. The email to teachers also contained an invitation, to participate in the interview portion of the study. The survey remained open for two weeks. Informed consent (see Appendix G) for phase one of the study, the

Blended Learning Experience Survey, was shared with participants through the initial invitation to participate. Participants indicated their consent to participate by their completion of the survey.

Upon conclusion of the two-week survey response period, 49 teachers completed the survey. A minimum sample size of 30 was needed to ensure a normal distribution of the sample means (Bluman, 2017). Surveys were sent (n = 154) via email. Forty-nine participants responded to the survey producing a response rate of 32%. Thirty-nine participants responded to all 20 questions on the survey resulting in a 79.59% completion rate. Forty-nine respondents completed the 19 Likert-type scale questions. Ten participants did not complete the first question, *What does the term "blended learning" mean?,* the only open-ended question on the survey. The ability to share one's opinion, as afforded by the single open-ended question, encouraged participants' completion of the survey, however, some participants may have perceived the open-ended question as burdensome (Singer & Couper, 2017). The open-ended question on the survey was made optional for participants to complete in an effort to reduce the perceived burden on participants and to encourage completion of the remainder of the survey (Singer & Couper, 2017).

Participants who agreed to participate in the interviews (n = 12), phase two of the study, were sent an email confirming the date and time for the one-on-one interviews. Informed consent (see Appendix H) for the interview portion of the study was shared with participants as an attachment to the interview appointment email. Informed consent was also reviewed with each interview participant prior to beginning the interview. Over the course of 16 days, interviews were conducted in the school in which the teacher was

employed. Each interview lasted between 34 to 56 minutes. Relying on Creswell and Creswell's (2018) phenomenological study procedure for collecting data, data were collected about participants' perceptions of their experiences with blended learning. The descriptive data generated from the Blended Learning Experience Survey were used to direct the questions asked during the interview portion of the study. All interviews were audio recorded and transcribed for further analysis of participant responses (Mills & Gay, 2018).

Data Analysis

In an explanatory sequential mixed method study, the quantitative and qualitative data were analyzed independently (Creswell & Creswell, 2018; Mills & Gay, 2018). After independent analysis, the two data sets were then combined through integration (Creswell & Plano Clark, 2017). Creswell and Creswell (2018) suggested the integration of databases in mixed methods studies was the process of "connecting the quantitative results to the qualitative data collection" (p. 222). Thus, the quantitative survey data were used to guide the construction of the qualitative interview questions (Creswell & Creswell, 2018).

Responses from teachers to the Blended Learning Experience Survey were collected through the online survey tool Qualtrics. Responses to the single open-ended question on the survey were read in full to better understand the ideas conveyed by participant responses (Creswell & Creswell, 2018). The qualitative responses were coded manually to identify significant themes (Ngozwana, 2018). Survey response data from the 19 Likert-type scale questions were analyzed and presented using descriptive statistics including graphs (Bluman, 2017). Descriptive statistics were a method for

summarizing, organizing, and simplifying data for presentation using graphs, tables, and charts that included frequency distribution and percentage of response statistics (Bluman, 2017; Creswell & Creswell, 2018; Fraenkel, Wallen, & Hyun, 2018). Survey response data were uploaded to Excel and a frequency distribution table was created for each survey question. Bar graphs were used to display frequency distributions graphically through bar charts (Bluman, 2017). Since participants responded to all 19 interval/rating/continuous scale (Likert-type scale) statements, the percentage of responses did not need to be determined for each statement and factored into the frequency distribution (Frankel et al., 2018). Analysis of the responses to the open-ended question and the frequency distribution trends guided the creation of the interview questions.

The audio recorded interviews were transcribed, and content analysis was used to analyze interview responses from the second phase of the study (Creswell & Plano Clark, 2017; Frankel et al., 2018). According to Fink (2017), content analysis "is a method of analyzing qualitative data for the purpose of drawing inferences about the meaning of recorded information such as the open-ended responses and comments made by respondents" (p. 89). After preparing the qualitative data for analysis, Creswell and Creswell (2018) proposed reading through data completely to gain a sense of the tone, depth, meaning, and general ideas conveyed by the interview participants. Interview responses were coded manually to identify significant themes and trends (Ngozwana, 2018). A second phase of coding was instituted to remove infrequent or redundant codes (Fink, 2017). New themes emerged during the second phase of the coding process as the

initial set of codes changed (Creswell & Creswell, 2018; Creswell & Plano Clark, 2017; Ngozwana, 2018).

Ethical Considerations

Ethical considerations were measured, and safeguards were implemented to ensure the protection, confidentiality, and anonymity of study participants. Prior to data collection, IRB approval was received to confirm participants involved in the study were free from harm (Creswell & Creswell, 2018). All requisite site permissions were granted from the four school districts' superintendents (gatekeepers) requesting access to study participants (Creswell & Creswell, 2018). Participants who elected to take part in the survey portion of the study were emailed a link to the informed consent form for the study along with the survey. Superintendents' email addresses will be stored in a password-protected electronic file for three years (Fraenkel et al., 2018). Informed consent was considered signed and accepted if the survey was completed. Confidentiality and anonymity were maintained as identifying information such as email addresses, personal names, or school names were not required to complete the survey (Fraenkel et al., 2018). Survey data will be stored in a password-protected electronic file for three years (Fraenkel et al., 2018).

Participants who elected to take part in the interview phase of the study received an informed consent form. The informed consent form contained an outline of the purpose of the study, any risks associated with participation in the study, and the ability to opt out of the study at any time free from penalty. To protect the identity of interview participants, participants were assigned a pseudonym created using an online random name generator. To ensure anonymity and confidentiality all electronic files, documents,

and transcripts contained the pseudonym identifier in place of personally identifiable information. Interview audio recordings were stored in a password-protected file and physical copies of interview transcripts were kept in a locked filing cabinet (Fraenkel et al., 2018). Three years after completion of the study, all documents and files containing participant information, emails, survey data, and transcripts will be destroyed (Fraenkel et al., 2018).

Summary

In Chapter Three a brief review of the problem, purpose, and research questions that guided the study were explained. The mixed methods research design was presented in Chapter Three, along with an analysis of the population represented by this study. An examination of why a purposive sample was used for this study, including advantages and limitations associated with the selected sampling method, was provided. An in-depth analysis of the construction of the instrumentation used in both phases of the study was presented and discussions about the validity and reliability of the survey and interview questions were offered. Steps in the data collection process were revealed, followed by a detailed review of how the collected data were analyzed. Chapter Three concluded with an explanation of ethical considerations and safeguards engaged to protect study participants.

Chapter Four begins with a review of the problem and purpose of the study. The instruments developed for the study and a brief overview of how the data are presented are included. The remainder of the chapter is devoted to detailed analysis of the quantitative and qualitative data. The themes that emerged through analysis of the data are presented and a chapter summary concludes Chapter Four.

Chapter Four: Analysis of Data

Blended learning courses have increased sharply over the last 15 years in American high schools (Gurley, 2018). However, the term blended learning was often misunderstood by teachers as a result of limited professional development guided by a standard definition of blended learning (Gurley, 2018; Riel et al., 2016; Vaughan et al., 2017). To be successful, Riel et al. (2016) suggested teachers' perspectives about misunderstandings concerning terminology and blended learning pedagogy needed to be considered during implementation and future professional development. Few studies reflected current trends in blended learning professional development in secondary grades, and fewer studies focused on how blended learning terminology influenced pedagogical practices (Moore et al., 2017). The shortage of research at the high school level, focused on blended learning terminology and professional development, presented a gap in the literature that limited the support available to professionals who wished to establish and implement blended learning programs in their schools.

In part, the problem is without a shared definition of blended learning there was no common terminology by which teachers could define the practice. Additionally, the problem was the absence of a shared definition limits the effectiveness of professional development that supported the application of blended learning. Investigating the perceptions of teachers practicing blended learning at the high school level concerning the meaning of blended learning and participation in professional development that supports blended learning implementation can provide understanding and direction to educators who are transitioning from traditional instructional experiences to blended learning programs.

The purpose of this study was to establish if there was widespread understanding of the term "blended learning" among secondary teachers and how previous professional development experiences shaped teachers' knowledge of the definition and practice of blended learning. Additionally, the purpose of this study was to determine if future professional development, emphasizing blended learning terminology, would better support teachers' practice of blended learning.

The instruments employed in this study were a cross-sectional survey and original interview questions, both designed by the researcher. The cross-sectional survey contained 19 interval/rating/continuous scale (Likert-type scale) statements and one open-ended question. The survey was designed to measure teachers' understanding of the definition of blended learning, teachers' perceptions of previous professional development focused on blended learning, and future professional development high school teachers identified as supportive to their practice of blended learning. The survey was sent to 154 high school teachers in four Southwest Missouri school districts. Data consisted of a sample (n = 49) of high school teachers' responses to the Blended Learning Experience Survey.

The original interview questions were developed to elicit qualitative data during the second phase of the study. The open-ended interview questions were designed to stimulate deeper discussions about the blended learning experiences of participants. An interview guide which consisted of seven interview questions, was developed to ensure all interview participants were asked the same questions, in the same order. The data

consisted of a sample (n = 12) of high school teachers' responses to questions asked during the interview phase of the study.

Data collected from the Blended Learning Experience Survey were analyzed and presented using descriptive statistics including graphs displaying the measure of central tendency and frequency distribution for all responses. Data collected from the one-on-one interviews were analyzed to identify significant themes and trends. The themes and trends derived from the interview data were displayed through tables and discussions of the analysis.

Survey Data Analysis

Research question one. *What do high school teachers perceive as the definition of blended learning?* The one question and eight statements in the first section of the Blended Learning Experience Survey were designed to answer research question one by revealing high school teachers' perceptions of the definition of blended learning. Question one of the survey was an open-ended response question designed to elicit participants' perceptions of the definition of blended learning. The eight survey statements that completed the first section of the survey required participants to rate their perceptions of blended learning practices and criteria that constitute the definition of blended learning on a five-point Likert scale with responses ranging from *strongly disagree* to *strongly agree*.

Survey question 1. Participants in the study were asked to define the term "blended learning". This open-ended response question was designed to elicit participants' perceptions of the definition of blended learning. Participants' (n = 39) responses to the open-ended question were analyzed and coded manually to identify

significant themes. After analysis and coding of the responses to survey question one, six thematic definitions of blended learning emerged.

Theme 1. Blended learning definition included a combination of technology and traditional instruction. Analysis of question one responses revealed that 26% of teachers perceived the definition of blended learning as a combination of both traditional/face-to-face instruction and online instruction to support learning. A participant response example was "A mixture of traditional in-class learning using lectures and groups and using technology for the students to work independently." Another response example was "Blended learning means that instruction is received in two ways: online and face-to-face in the classroom."

Theme 2. Blended learning definition included the use of technology. Analysis of question one responses revealed that 26% of teachers perceived the definition of blended learning as the use of technology to support learning. A participant response example was "When a teacher uses technology to support her classroom teaching." Another response example was "Blended learning is when some of the learning is on a computer."

Theme 3. Blended learning definition included the use of resources. Analysis of question one responses revealed that 21% of teachers perceived the definition of blended learning as the use of various resources to support learning. A participant response example was "Having various resources to learn." Another response example was "Taking the same standards and using different resources to present the information so that students can process the information in different ways in order to increase their depth of knowledge."

Theme 4. Blended learning definition including the use of "blend" with little context. Analysis of question one responses revealed that 8% of teachers perceived the definition of blended learning as blending content or blending technology. An example of a participant's response was "Blending technology in an effort to help teach students content knowledge." Another response example was "A style of learning in which the student first interacts with a blended content delivery system and then applies the presented concepts through other technologies."

Theme 5. Blended learning definition including the use of "learning styles" with little context. Analysis of question one responses revealed that 8% of teachers perceived the definition of blended learning as recognizing different learning styles. A participant response example was "Knowing online learning and other styles." Another response example was "More than one type of learning styles [sic] that come together to give a person an all-around view of a topic."

Theme 6. No knowledge of the definition of blended learning. Analysis of question one responses revealed that 26% of teachers did not know the definition of blended learning. A participant response example was "I am not exactly sure of the meaning of the term." Another response example was "I am not really sure, but I think it deals with different teaching methods."

Survey statement 2. Participants in the study were asked to rate their perceptions about whether the term "blended learning" was commonly understood by high school teachers. Analysis of the survey response data revealed that 28.57% of teachers *agree* or *strongly agree* that the term blended learning is commonly understood (see Figure 1). However, of the 28.57% of respondents who *agree* or *strongly agree*, only 2.04%

strongly agree that the term blended learning is commonly understood. In contrast, 32.65% of teachers *strongly disagree* or *disagree* that the term blended learning is commonly understood. Nearly 39% of participants responded they were *uncertain* if the term blended learning is commonly understood by high school teachers.

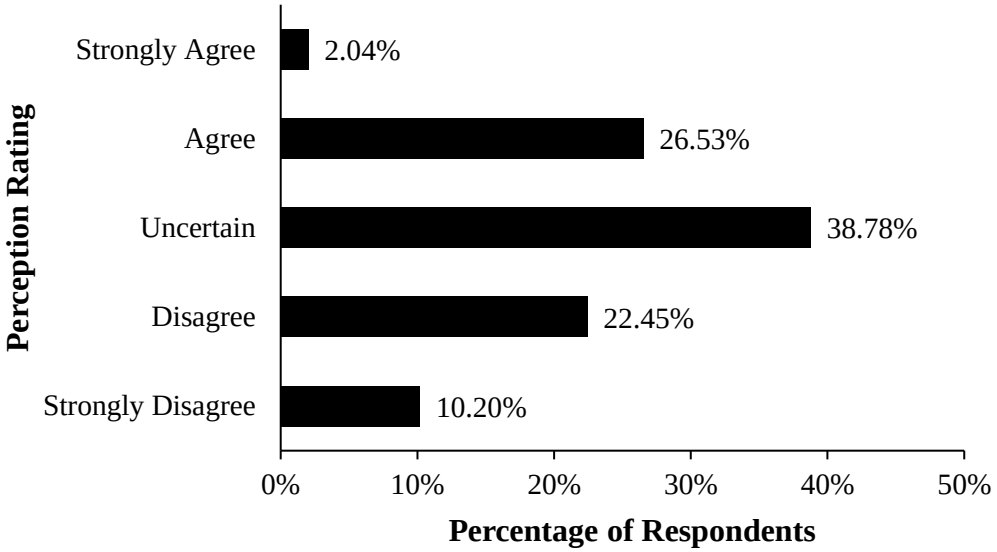

Figure 1. Teachers' perception rating of whether the term "blended learning" is commonly understood by high school teachers.

Survey statement 3. Participants in the study were asked to rate their perceptions about whether the terms "blended learning" and "one-to-one" are synonymous. Analysis of the survey response data revealed that 22.44% of teachers were *uncertain, agree,* or *strongly agree* that the terms "blended learning" and "one-to-one" are synonymous (see Figure 2). In contrast 77.55% of teachers *strongly disagree* or *disagree* that the terms "blended learning" and "one-to-one" are synonymous.

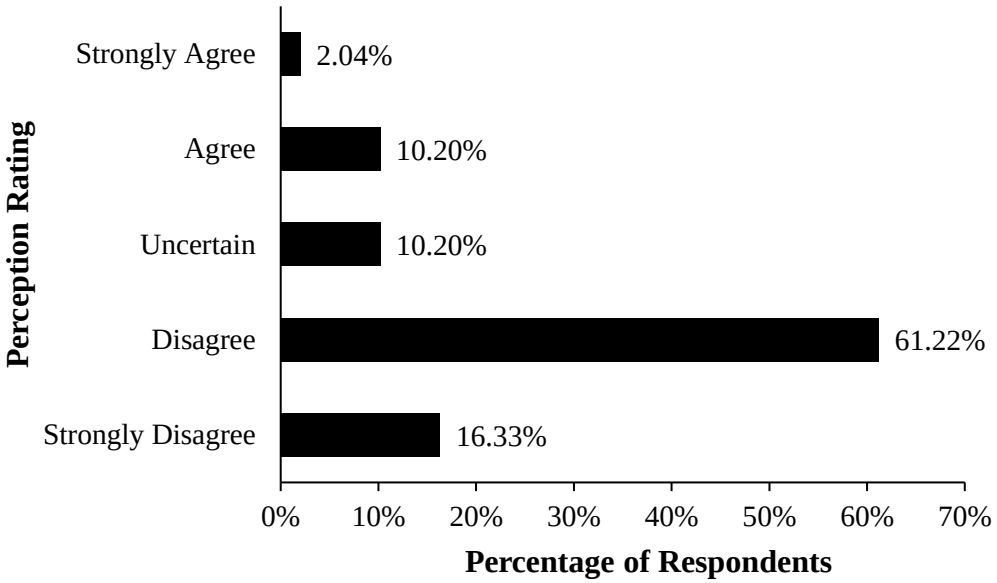

Figure 2. Teachers' perception rating of whether the terms "blended learning" and "one-to-one" are synonymous.

Survey statement 4. Participants in the study were asked to rate their perceptions about whether the use of a learning management system is necessary for blended learning to take place. Analysis of the survey response data revealed that 48.98% of teachers *agree*, or *strongly agree* that the use of a learning management system is necessary for blended learning to take place (see Figure 3). In contrast 34.69% of teachers *strongly disagree* or *disagree* that the use of a learning management system is necessary for blended learning to take place. However, 16.33% of teachers were *uncertain* about the use of a learning management.

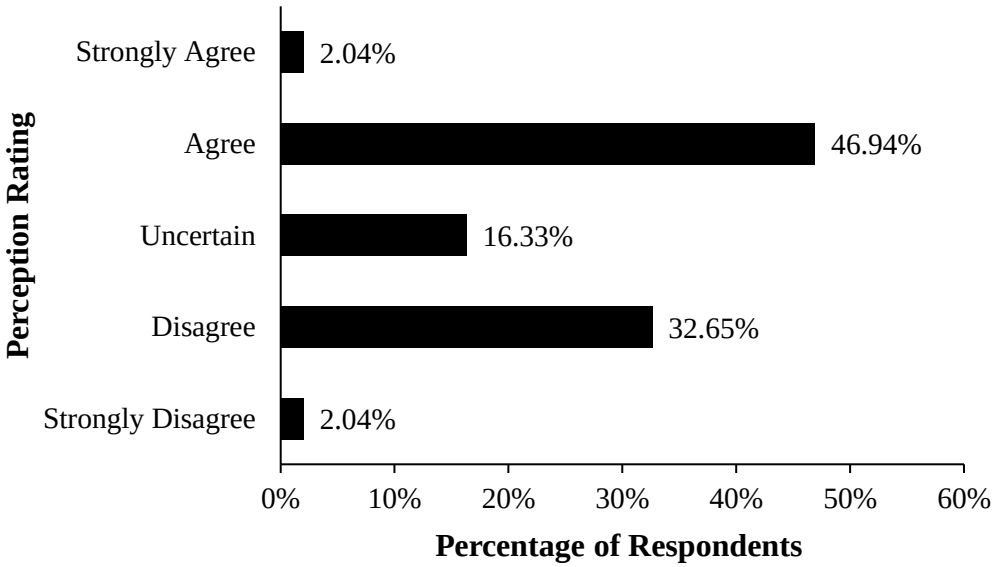

Figure 3. Teachers' perception rating about the necessity of a learning management system for blended learning to take place.

Survey statement 5. Participants in the study were asked to rate their perceptions about whether the online learning elements of blended learning include some aspects of student control over place, time, and pace of learning. Analysis of the survey response data revealed that 79.59% of teachers *agree,* or *strongly agree* that blended learning includes some aspects of student control over place, time, and pace of learning (see Figure 4). In contrast only 8.16% of teachers *disagree* and 12.24% of teachers were *uncertain* that blended learning includes some aspects of student control over place, time, and pace of learning.

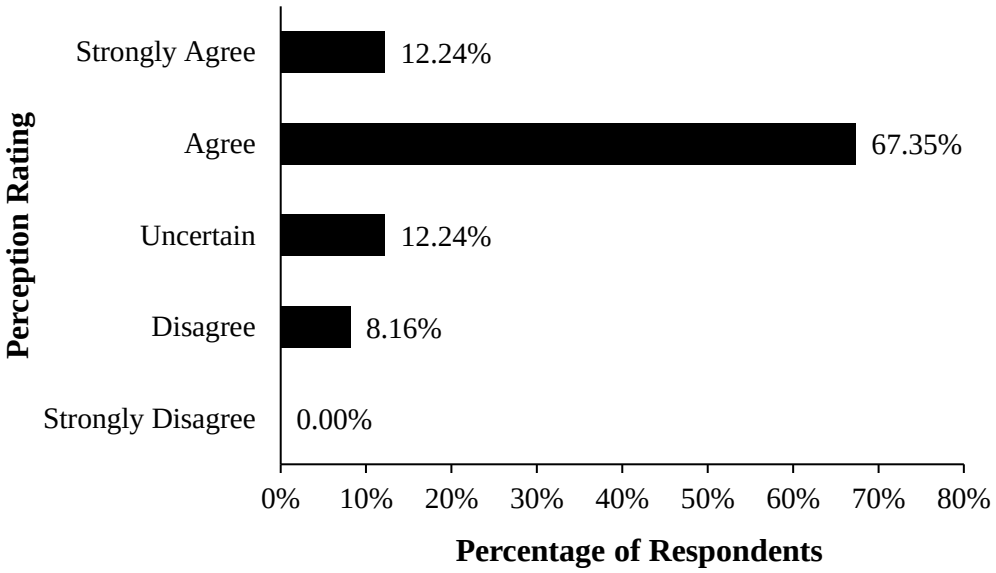

Figure 4. Teachers' perception rating of the online learning elements of blended learning including some student control over place, time, and pace of learning.

Survey statement 6. Participants in the study were asked to rate their perceptions about whether a blended learning environment was created by posting all course material online, using digital textbooks, and having students use online word processing. Analysis of the survey response data revealed that 28.57% of teachers *agree* that a blended learning environment was created by posting all course material online, using digital textbooks, and having students use online word processing (see Figure 5). In contrast 59.18% of teachers *strongly disagree* or *disagree* that a blended learning environment was created by posting all course material online, using digital textbooks, and having students use online word processing.

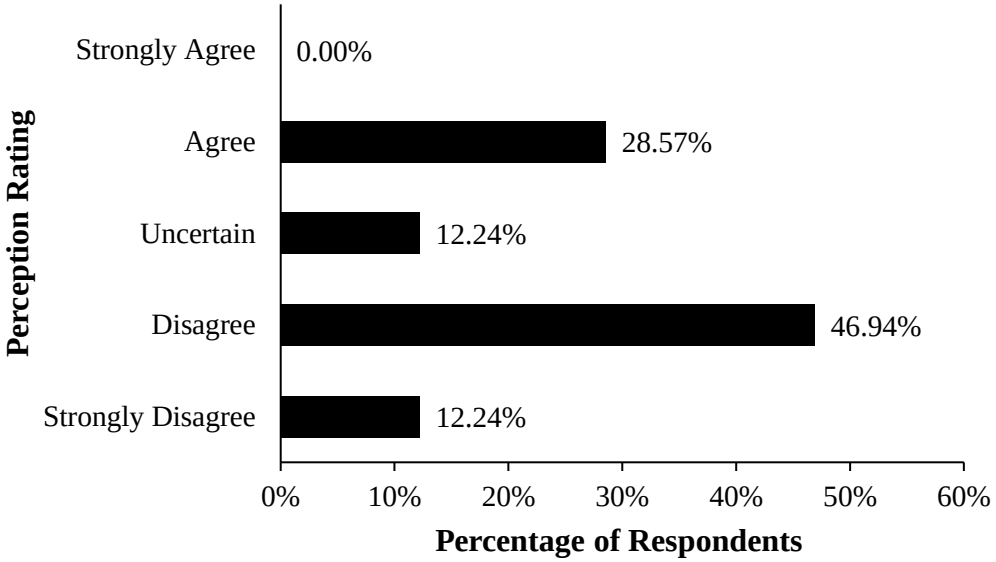

Figure 5. Teachers' perception rating of the creation of blended learning environments.

Survey statement 7. Participants in the study were asked to rate their perceptions about whether blended learning supported differentiated instruction. Analysis of the survey response data revealed that 83.68% of teachers *agree*, or *strongly agree* that blended learning supported differentiated instruction (see Figure 6). In contrast only 4.08% of teachers *disagree* and 12.24% were uncertain about whether blended learning supported differentiated instruction.

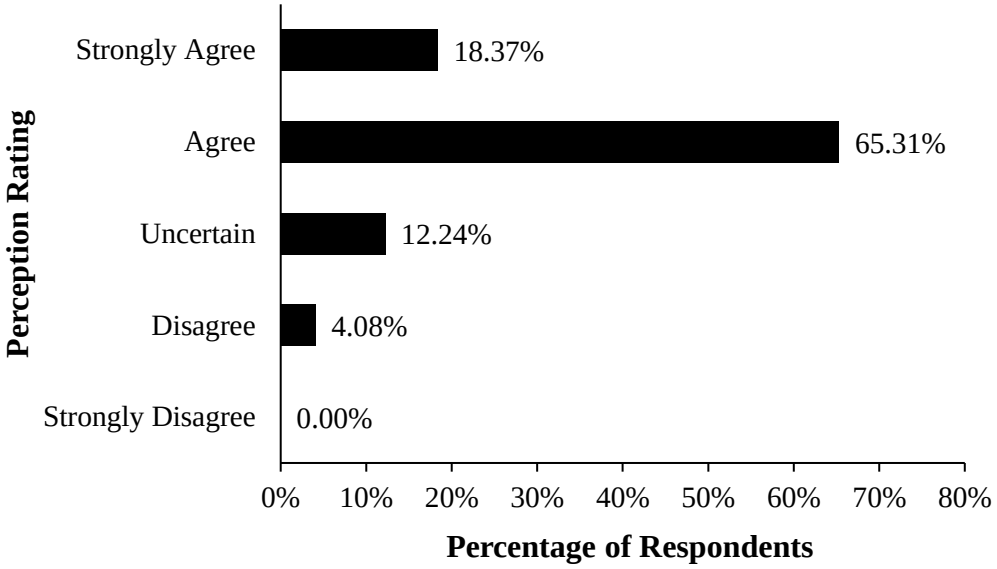

Figure 6. Teachers' perception rating of blended learning's support of differentiated instruction.

Survey statement 8. Participants in the study were asked to rate their perceptions about increased student learning through a variety of instructional practices. Analysis of the survey response data revealed that 89.79% of teachers *agree,* or *strongly agree* that student learning benefited when a variety of instructional approaches were used (see Figure 7). In contrast only 10.2% of teachers *disagree* or were *uncertain* that a variety of instructional practices increased student learning.

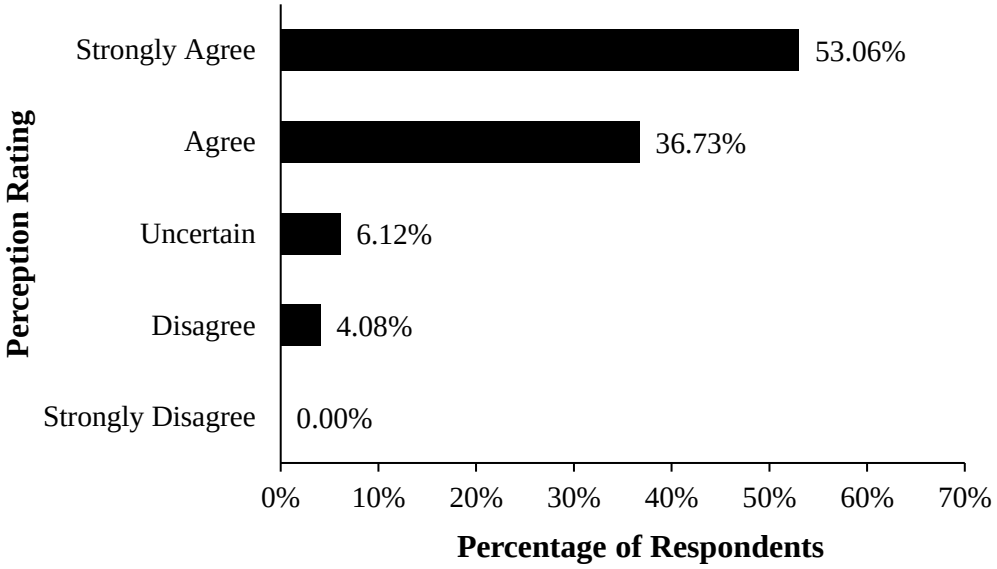

Figure 7. Teachers' perception rating of the benefits of a variety of instructional approaches on student learning.

Survey statement 9. Participants in the study were asked to rate their perceptions about increased student achievement through the incorporation of a blended learning approach. Analysis of the survey response data revealed that 46.93% of teachers *agree,* or *strongly agree* that through the incorporation of a blended learning approach student achievement increased (see Figure 8). In contrast nearly 50% of teachers were *uncertain* that the incorporation of a blended learning approach could increase student achievement.

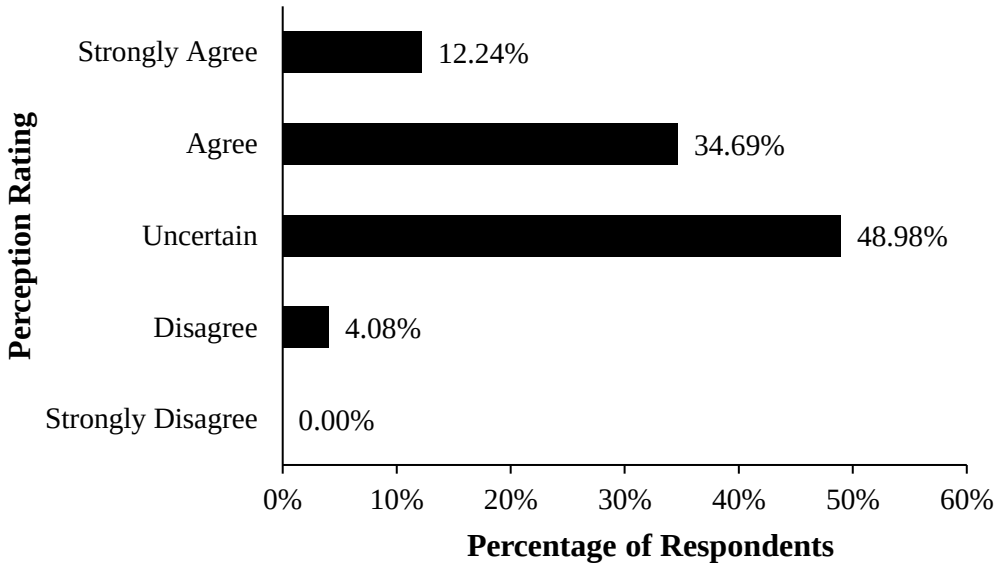

Figure 8. Teachers' perception rating of the impact of the incorporation of blended learning on student achievement.

Survey statement 10. Participants in the study were asked to rate their perceptions about possessing the necessary resources to support blended learning instruction. Analysis of the survey response data revealed that 44.89% of teachers *agree,* or *strongly agree* that teachers possess the necessary resources to support blended learning instruction (see Figure 9). In contrast nearly 34.69% of teachers were *uncertain* that teachers possess the necessary resources to support blended learning instruction. Additionally, 20.41% of teachers *disagree* teachers possess the necessary resources to support blended learning instruction.

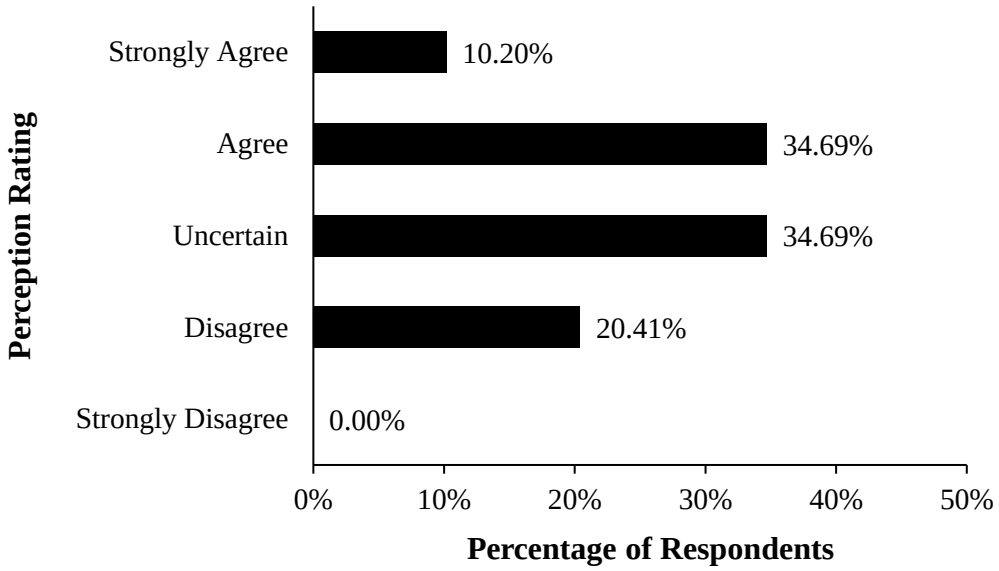

Figure 9. Teachers' perception rating of teachers possessing resources to support blended learning instruction.

Research question two. *What are high school teachers' perceptions of previous professional development experiences that support blended learning instruction?* The five statements in the second section of the Blended Learning Experience Survey were designed to answer research question two by revealing high school teachers' perceptions of the previous professional development they had to support blended learning. The five survey statements included in the second section of the survey required participants to rate their perceptions of the previous professional development they had to support blended learning on a five-point Likert scale with responses ranging from *strongly disagree* to *strongly agree*.

Survey statement 11. Participants in the study were asked to rate their perceptions about whether teachers had been trained to incorporate blended learning instruction. Analysis of the survey response data revealed that 26.53% of teachers *agree,*

or *strongly agree* that teachers had been trained to incorporate blended learning instruction (see Figure 10). In contrast 73.47% of teachers *strongly disagree*, *disagree, or were uncertain* teachers had been trained to incorporate blended learning instruction.

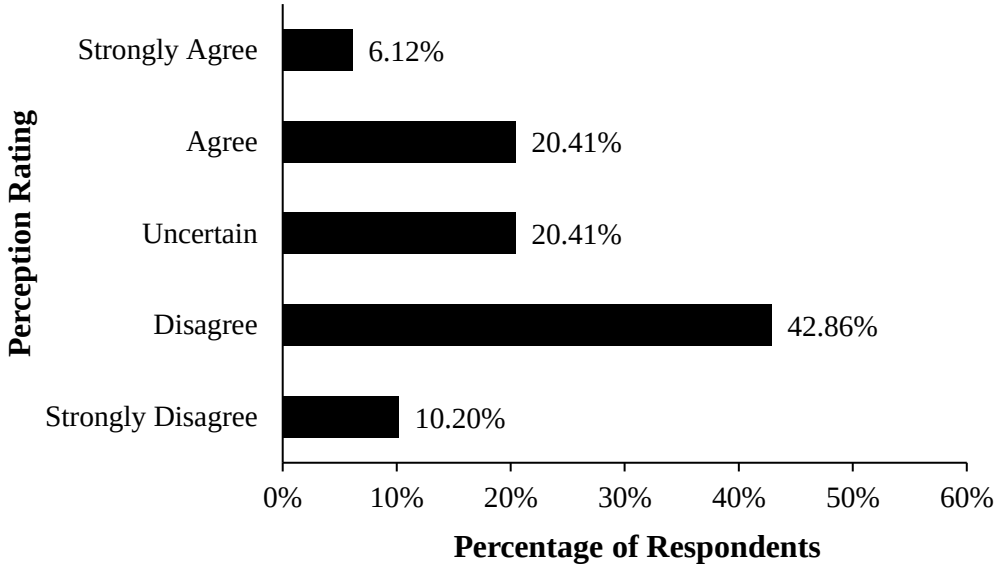

Figure 10. Teachers' perception rating of previous professional development to incorporate blended learning.

Survey statement 12. Participants in the study were asked to rate their perceptions about whether previous professional development included observation of teachers practicing blended learning instruction. Analysis of the survey response data revealed that 28.57% of teachers *agree,* or *strongly agree* that teachers had been trained to incorporate blended learning instruction (see Figure 11). In contrast 51.02% of teachers *strongly disagree* or *disagree,* teachers had been trained to incorporate blended learning instruction. In addition, 20.41% of teachers were *uncertain* if previous professional development included observation of teachers practicing blended learning instruction.

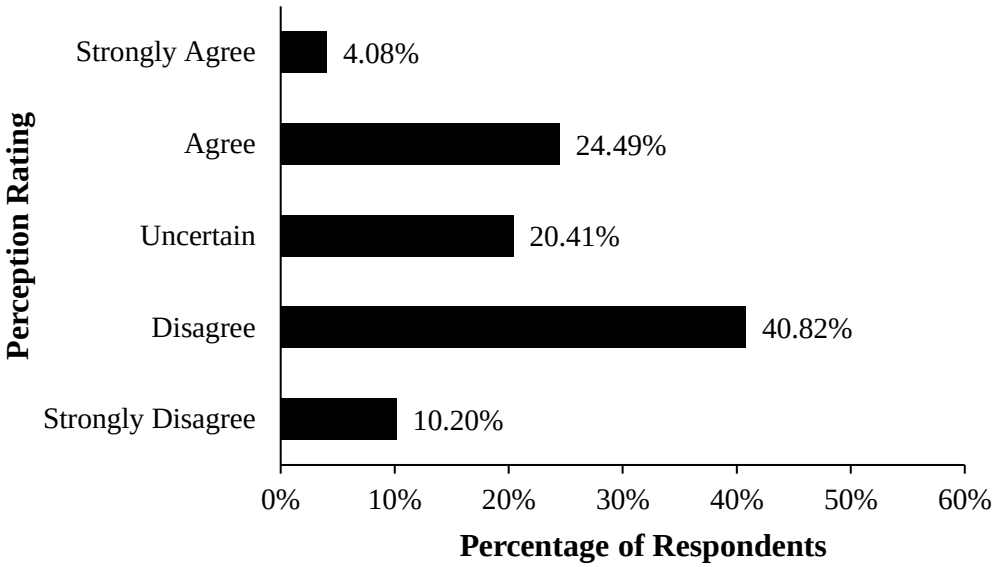

Figure 11. Teachers' perception rating of previous professional development that included observation of blended learning instruction.

Survey statement 13. Participants in the study were asked to rate their perceptions of the expectations of administrators for using blended learning instruction. Analysis of the survey response data revealed that 50% of teachers *agree,* or *strongly agree* that administrators expect to see blended learning instruction (see Figure 12). In contrast only 8.16% of teachers *disagree* that administrators expect to see blended learning. Additionally, 41.84% of teachers were *uncertain* if administrators expect to see blended learning instruction.

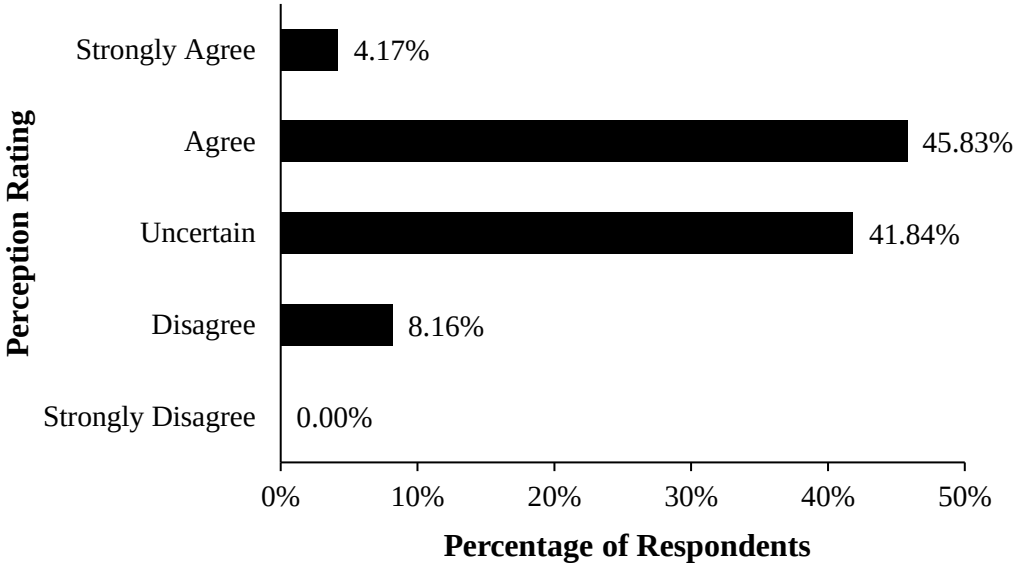

Figure 12. Teachers' perception rating of administrators' expectation for blended learning instruction in the classroom.

Survey statement 14. Participants in the study were asked to rate their perceptions about whether previous professional development included training in both pedagogy and technology. Analysis of the survey response data revealed that 48.98% of teachers *agree*, or *strongly agree* that teachers had previous professional development that included training in both pedagogy and technology (see Figure 13). In contrast 30.61% of teachers *disagree* that teachers had been trained to incorporate blended learning instruction. In addition, 18.37% of teachers were *uncertain* if teachers had previous professional development that included training in both pedagogy and technology.

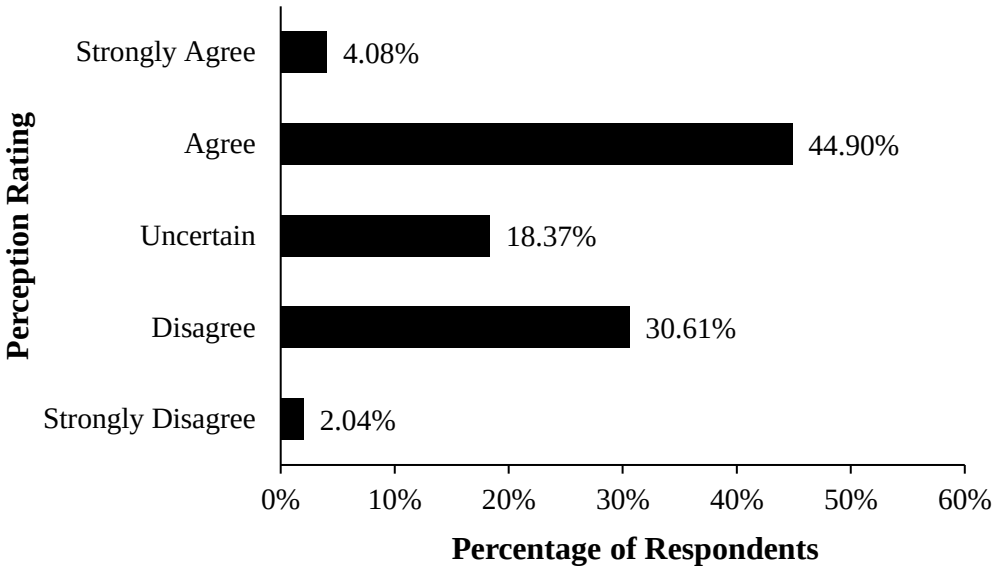

Figure 13. Teachers' perception rating of the inclusion of pedagogy and technology in previous professional development.

Survey statement 15. Participants in the study were asked to rate their perceptions about whether professional development, focused on blended learning, had been provided during the previous two years. Analysis of the survey response data revealed that 57.14% of teachers *agree,* or *strongly agree* that teachers had been provided blended learning training during the previous two years (see Figure 14). In contrast 28.57% of teachers *strongly disagree* or *disagree,* that teachers had been provided blended learning training during the previous two years. In addition, 14.29% of teachers were *uncertain* if teachers had been provided blended learning training during the previous two years.

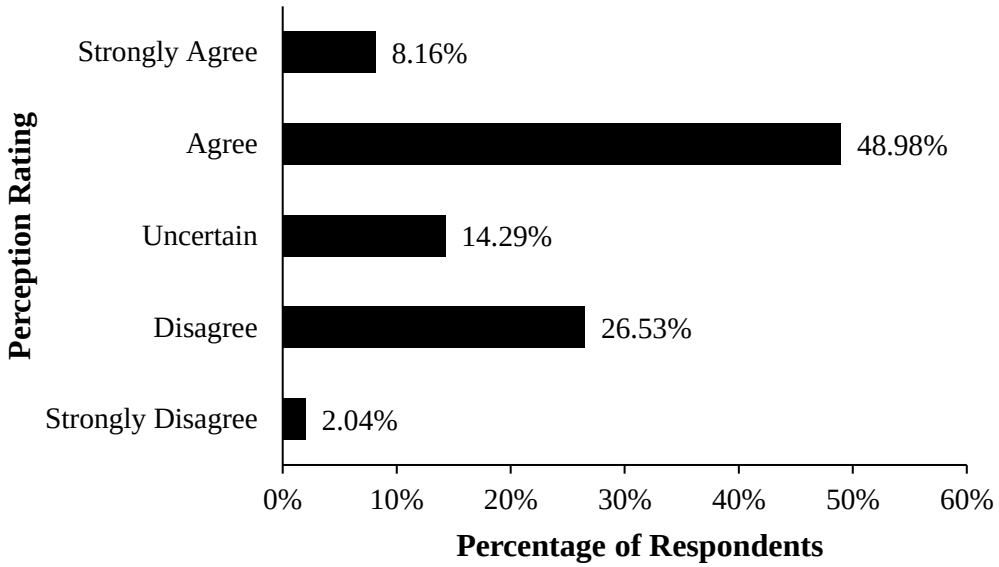

Figure 14. Teachers' perception rating of professional development having been provided in past two years, focused on blended learning.

Research question three. *What future professional development would high school teachers perceive as supportive to their practice of blended learning in the classroom?* The five statements in the third section of the Blended Learning Experience Survey were designed to answer research question three by revealing high school teachers' perceptions of future professional development they would find valuable to supporting blended learning. The five survey statements included in the third section of the survey required participants to rate their perceptions of future professional development they would find valuable to supporting blended learning on a five-point Likert scale with responses ranging from *strongly disagree* to *strongly agree*.

Survey statement 16. Participants in the study were asked to rate their perceptions about attending district professional development, focused on blended learning, if provided outside of the contracted day. Analysis of the survey response data

revealed that 46.93% of teachers *agree,* or *strongly agree* they would attend district professional development, focused on blended learning, if provided outside of the contracted day (see Figure 15). In contrast 20.41% of teachers *strongly disagree* or *disagree,* they would attend district professional development, focused on blended learning, if provided outside of the contracted day. In addition, 32.65% of teachers were *uncertain* they would attend district professional development, focused on blended learning, if provided outside of the contracted day.

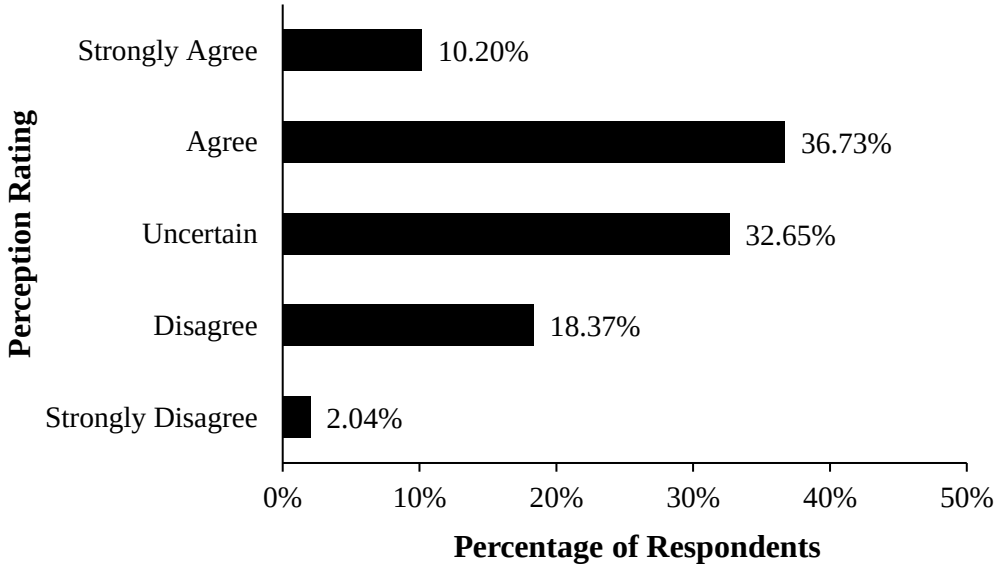

Figure 15. Teachers' perception rating of attending future professional development focused on blended learning outside of the contracted day.

Survey statement 17. Participants in the study were asked to rate their perceptions about whether future professional development that emphasized an agreed upon definition of blended learning would support understanding of the practice. Analysis of the survey response data revealed that 75.51% of teachers *agree,* or *strongly agree* that future professional development that emphasized an agreed upon definition of

blended learning would support understanding of the practice (see Figure 16). In contrast 2.04% of teachers *disagree* that future professional development that emphasized an agreed upon definition of blended learning would support understanding of the practice. Additionally, 22.45% of teachers were *uncertain* if future professional development that emphasized an agreed upon definition of blended learning would support understanding of the practice.

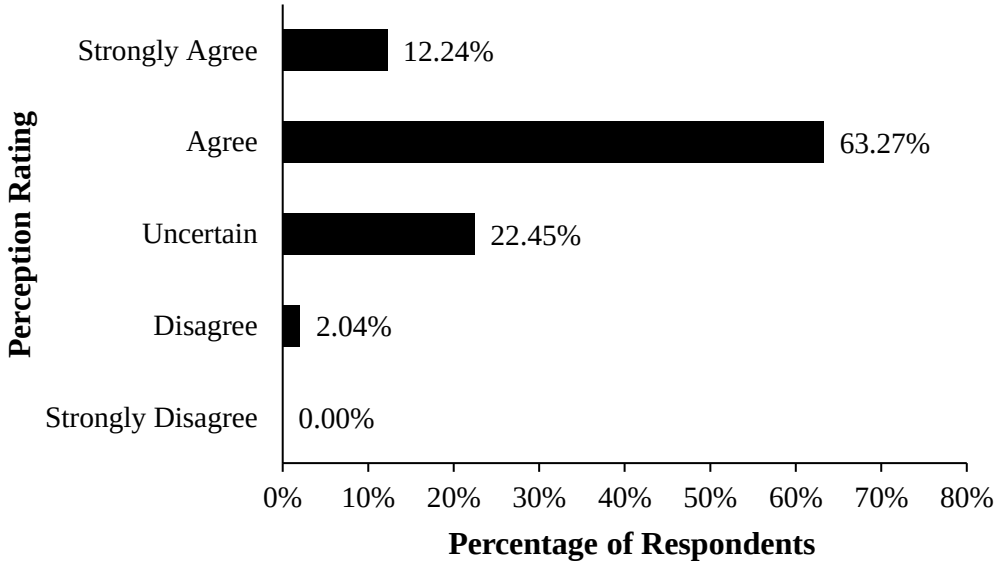

Figure 16. Teachers' perception rating of the value of future professional development that emphasized a definition of blended learning.

Survey statement 18. Participants in the study were asked to rate their perceptions about the benefit of providing future professional development about blended instruction, using blended instructional practices. Analysis of the survey response data revealed that 89.80% of teachers *agree,* or *strongly agree* that providing future professional development about blended instruction, using blended instructional

practices, would be beneficial (see Figure 17). In contrast 10.20% of teachers were *uncertain* if providing future professional development about blended instruction, using blended instructional practices, would be beneficial.

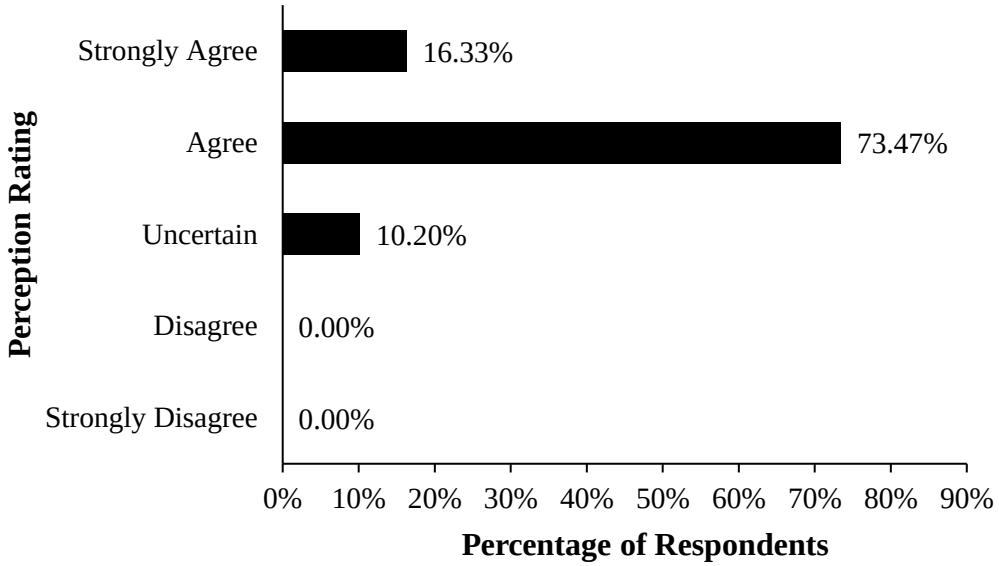

Figure 17. Teachers' perception rating of the benefit of future professional development about blended instruction, using blended instructional practices.

Survey statement 19. Participants in the study were asked to rate their perceptions about whether future professional development that included reasons for adopting blended learning would promote further use of the instructional practice. Analysis of the survey response data revealed that 85.72% of teachers *agree*, or *strongly agree* future professional development that included reasons for adopting blended learning would promote further use of the instructional practice (see Figure 18). In contrast 14.29% of teachers were *uncertain* if future professional development that included reasons for adopting blended learning would promote further use of the instructional practice.

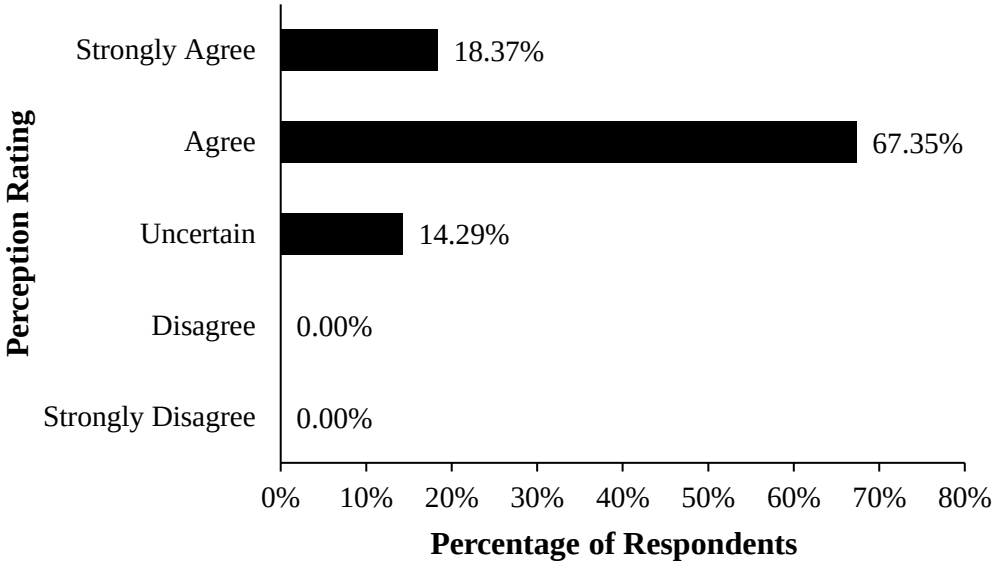

Figure 18. Teachers' perception rating of value of future professional development that included reasons for adopting blended learning.

Survey statement 20. Participants in the study were asked to rate their perceptions about their interest in ongoing professional development with colleagues to design, implement, reflect, and refine blended learning instruction. Analysis of the survey response data revealed that 79.60% of teachers *agree*, or *strongly agree* that they would be interested in ongoing professional development with colleagues to design, implement, reflect, and refine blended learning instruction (see Figure 19). In contrast 10.20% of teachers *disagree* that they would be interested in ongoing professional development with colleagues to design, implement, reflect, and refine blended learning instruction. In addition, 10.20% of teachers were *uncertain* if they would be interested in ongoing professional development with colleagues to design, implement, reflect, and refine blended learning instruction.

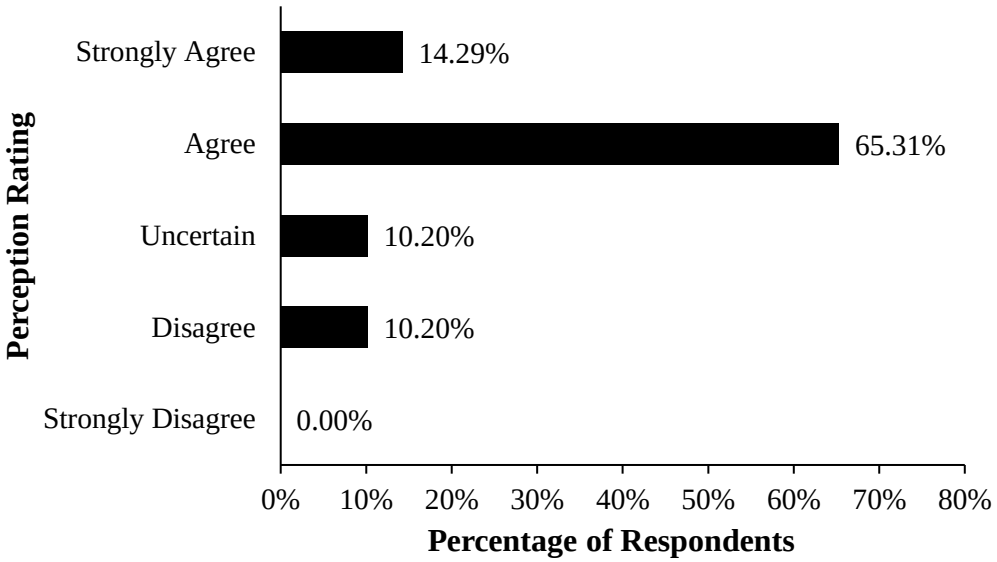

Figure 19. Teachers' perception rating of ongoing professional development with colleagues to design, implement, reflect, and refine blended learning instruction.

Interview Data Analysis

Seven original interview questions were developed to elicit qualitative data during the second phase of the study. The open-ended interview questions were created to stimulate deeper discussions about the blended learning experiences of participants. The interviews were guided by the Interview Guide to confirm each open-ended question asked during the interview related to a research question, participants (n = 12) were asked the same questions, and questions were asked in the same order. After content analysis and coding of the interview transcripts, several themes about participants' perceptions of blended learning emerged. Table 5 contains interview participants' demographic information.

Table 5

Interview Participants' Demographic Information

Participant Name[a]	Primary Content Area	Years in Education
Adam	Mathematics	15
Arnold	Science	8
Bev	Science	9
Camilla	Science	12
Deb	Fine Arts	18
Erica	Mathematics	2
Gloria	Special Education	16
Lilly	Science	4
Steve	Social Studies	3
Thomas	Social Studies	17
Victor	Fine Arts	4
Walter	Social Studies	21

Note. [a]Participants were assigned pseudonyms by the researcher using an online random name generator to select the pseudonyms.

Research question one. *What do high school teachers perceive as the definition of blended learning?* The first three questions asked to interview participants were designed to answer research question one by revealing high school teachers' perceptions of the definition of blended learning.

Interview question 1. *What does the term blended learning mean to you?* Participant responses varied regarding the definition of blended learning. Seven respondents suggested blended learning meant the use of a variety of resources to support student learning. Lilly, who stated blended learning meant "using a variety of resources in the classroom to teach the concepts, whether that's technology, that's hands on, that's experimentation, or that's writing," exemplified the responses of several participants. Four participants did not mention the use of online or technology-based resources in their

definitions, instead their definitions focused on student or teacher engagement with resources. Thomas stated blended learning "is when teachers and students use many resources in the classroom to help learning."

Eight participants indicated blended learning involved the use of online or technology-based resources to support learning. Walter suggested blended learning was defined as "a method where you front load content online, allowing students to work at their own pace, then provide feedback once the content has been delivered." While Gloria defined blended learning as "using technology tools and computers in classrooms, like the one-on-one [sic] Chromebooks." Although eight participants invoked the use of technology or online resources in their definitions, only Bev and Arnold constructed definitions of blended learning that referenced learning that occurred through both technology-based and traditional methods. Bev identified blended learning as "students learning through a teacher, in a traditional classroom setting, and through online methods that may, or may not, include their classroom teacher's presence." Arnold stressed that blended learning "is the blending of learning through 'old school' classroom strategies and 'new school' technology-based strategies."

Several participants emphasized student control over learning in their definitions. Student control themes included individualized learning, choice in learning, reflective learning, control of time and place, and autonomy. Deb proposed blended learning "means students are more independently able to use technology resources to create their own kind of learning." Steve, argued the definition of blended learning was "flexible options for students to learn from," but added "blended learning can only be called

blended learning when the teacher establishes parameters or limits for what kids can do when they're online."

Interview question 2. *How has blended learning impacted you as a teacher?* Teachers' responses to how blended learning impacted them were framed in both opportunistic and challenging tones. Immediate feedback opportunities technology provided to both teachers and students were praised by 10 teachers, who, like Victor, regarded feedback as "incredibly impactful." Two participants suggested feedback received from student data, generated through online resources, guided their daily practice. Arnold expressed that data he received from student engagement with online learning modules and formative assessments, completed outside of class, allowed him to "pinpoint who was 'getting it' and who was not" and to make instant changes to his lesson plans. Furthermore, Arnold suggested he felt more like a "facilitator of learning" instead of the "owner of learning" when he relied on data to guide his lessons. Conversely, Camilla stated she used data, generated from daily online exit tickets, to assess "where students are at" to guide the next day's lesson.

The majority of participants suggested blended learning impacted the amount and type of feedback they provided to students. Participants' feedback to students was largely in response to online practice, assessments, and reviews students had completed. Adam and Bev alluded to the efficiency technology afforded for providing feedback. Additionally, Steve appreciated the "the real time feedback" he could provide students through online word processing tools such as Google Docs. Four respondents stated they had increased the amount of feedback they provided students since adopting blended learning strategies. Victor proposed technology allowed him to provide "more detailed"

feedback to students because he could quickly send each student feedback online. Similarly, Walter suggested he gave "deeper feedback" more often because of his preference for "typing up quick feedback notes instead of writing them" and sharing them with students through the learning management system (LMS) used by his school.

Differentiation and enrichment were recognized by several participants as practices that have been impacted by blended learning. Three participants cited blended learning allowed them to recognize struggling students quicker and differentiate assignments. Bev, however, identified that blended learning practices allowed her to "differentiate classroom and online instruction," not just assignments. Six respondents mentioned their use of blended learning increased student enrichment. Blended learning allowed Arnold to offer more "higher level" enrichment activities, while Lilly found blended learning allowed her to "provide them [students] more meaningful science related experiences."

Nearly all participants pointed to the availability of online resources as a positive impact of blended learning on their teaching. The quantity of online resources available to teachers such as labs, images, video tutorials, and study guides were mentioned by participants frequently. Teacher respondents named 24 specific online resources they used with students (see Appendix I). Walter relayed that the variety of online resources were "one of the most important" features of blended learning. Arnold argued, however, that blended learning did not provide access to more resources, rather "resources have been online for years, blended learning just put them in my students' hands." Not all participants appreciated the quantity of resources available. Gloria contended "computers give my students too many resources and they get lost." Echoing Gloria's

sentiments, Thomas, found the number of resources available online to be "overwhelming for most students." Bev too acknowledged the amount of resources available online could be overwhelming, but countered "our jobs have always required us to decide on the best resources, even before the internet."

All 12 participants acknowledged blended learning presented multiple challenges. A wide range of technology-focused concerns such as device management, limited access to technology, insufficient access to high speed internet, and inadequate technology skills of both teachers and students were considered by teacher respondents as challenging elements of blended learning. Four participants indicated that while their students had grown-up with technology, many students lacked fundamental technology skills. Adam pointed to student deficiencies in "file management, digital citizenship, and just the ability to use a Chromebook" as limitations to students' successful use of technology in blended environments. Similarly, Victor reasoned some of his students were "struggling with the technology so much that the communication of their knowledge is not coming through." Gloria felt the "push to use computers" did not match the support students needed "to learn to use the things in class." Five participants recognized their own struggles with technology including Thomas, who had difficulty learning to use a Chromebook and thought teaching was "easier when I just put assignments on paper."

Learning how to "teach online and in person" proved to be a problem for Lilly. She expressed confusion, as did Thomas and Gloria, understanding which elements of instruction "to put online" and which to "present in the classroom" herself. Camilla perceived herself to be "a good teacher until I realized I had no idea what I was doing trying to teach online." Erica suggested she believed blended learning offered her more

opportunities to reach students, but she was "still trying to figure out how to incorporate the online part of it [blended learning]." Steve claimed many teachers did not know how to use technology to teach and "they just used it [technology] as a crutch" to get through the day.

Interview question 3. *Based on your experiences, how do you feel blended learning impacts students?* Teachers' perceptions regarding blended learning's impact on students were wide-ranging. Blended learning was viewed, by a majority of participants, as having empowered students to play an active role in their own learning. Bev proposed blended learning allowed her students to "select how they wanted to learn" while Arnold stated the online elements of blended learning afforded his students "freedom to learn on their schedule." According to Erica, students benefited when they could choose supplemental resources that best fit their own learning needs, such as website links, videos, and assessment review guides, she embedded in her LMS. Walter suggested blended learning placed a greater "onus on the student to learn," but added students also had "freedom to pick their method of learning."

Seven participants asserted the online interactive apps and websites they used promoted greater student engagement with their content. The immediate feedback some online apps and tools gave students was viewed by Walter as a "critical piece of blended learning." Erica believed the access her students had to online math resources that offered immediate feedback supported their understanding of math. Gloria "resisted technology" in her math class, but found that Kahoot!, an online formative assessment and review game, engaged her students "more than any paper review" had. The online science labs that Lilly, Camilla, and Bev incorporated into their lessons allowed their

students to engage with science in new ways and conduct experiments that were too costly or unsafe for the classroom. Steve noted student engagement and learning "skyrocketed" when students used online interactive primary documents from the National Archives' website.

Blended learning was perceived by 10 participants to offer new methods of communication and collaboration. Steve felt blended learning gave his "quiet students a voice" through the use of online discussion boards and podcasting. Similar to Steve's response, Walter proposed that "even my shyest kid can be heard" when she used online communication and collaboration tools. Two teacher respondents shared how blended learning had increased their students' online and in-class communication skills. Bev explained how her students' practice of effective communication through online discussion boards encouraged them to practice effective communication in her classroom. Camilla also believed her students had become better communicators through opportunities to practice online. Nine participants perceived online collaboration tools, such as Google Docs and Slides, increased student learning through collaboration. Deb agreed that online collaboration tools increased student learning, but felt middle school students had more opportunities to practice online collaboration than her high school students.

Gloria shared how her students struggled to find online resources and information relevant to their lessons. She believed her students' lack of online literacy limited her ability to incorporate online learning opportunities. Bev felt that her students had shown growth in their online literacy skills from when she first incorporated blended learning, however, she still struggled with students who "refuse to look past the first source they

come to in Google." Participants' concerns regarding online literacy focused predominantly on students' inability to find valid sources, navigate data bases, evaluate websites, and use search engines effectively. Thomas stated that although high school students "might be digital natives," they had few technology skills beyond "taking selfies."

All 12 participants shared that blended learning had, at some time, negatively impacted their students, however, only four respondents believed blended learning continued to have a negative impact on students. A concern expressed by many teacher respondents was the amount of time they perceived students spent off-task while online. Gloria contended students "think they can do whatever they want" when they are online and that the "push to use them [computers] has done nothing but hurt kids' learning." Deb and Bev both stated when they first adopted blended learning, students were so distracted while online they briefly stopped using online resources. Four participants remarked their students preferred using paper and pencil rather than Chromebooks to complete school work. Camilla suggested some of her students asked regularly to not have to complete assignments online, rather they preferred to submit assignments on paper.

Research question two. *What are high school teachers' perceptions of previous professional development experiences that support blended learning instruction?* The next two questions asked to interview participants were designed to answer research question two by revealing high school teachers' perceptions of the previous professional development they had received to support blended learning.

Interview question 4. *What are school leaders' expectations for teachers to practice blended learning in your school?* Steve and Victor believed school leaders' expectations for blended learning were rooted in financial arguments. Steve suggested he had never had an administrator use the term "'blended learning' at any school I've been." In addition, he added the expectation to use technology had always been "driven by the expense, not best practice." Victor stated when he taught in another district, the expectation was to use laptops because the "district paid for them," not because devices "supported blended learning." Although she did not feel her current district placed demands on her to practice blended learning, Gloria stressed she used technology in a previous district because "we were told to, that was the expectation." Erica stated her previous building leader expected teachers "to be using the computer for something" since her district spent money to send teachers to training. However, she continued, "'something' was never made clear, so I was left finding my own tools and strategies." Bev also expressed that building leadership "definitely thought we should be using devices and blended learning," but teachers were provided few opportunities for training early in their adoption. She added, however, "today, the expectation is quality, not quantity." Adam felt expectations were not clear, but since the district had "invested in training about the SAMR model," he thought he needed to be using technology in his class.

Several participants stated there was no expectation for teachers to practice blended learning in their schools. Additionally, two teachers expressed the only expectation leaders had for them was to use their district's LMS. Lilly was thankful for the "autonomy" her building leader gave her to "do what's best for the class." While

Thomas shared that his administration had "no expectations for blended learning" and that its use was "up to the teacher." Camilla stated that she too was not expected to practice blended learning, however, "one of the things on our evaluation walkthroughs last year was our use of technology." The expectations for blended learning placed on Walter and Deb were similar. Walter suggested he was only expected to "attempt to use blended ideas," while Deb expressed the only expectation placed on her was that she "tried to use more resources," but concluded "more resources" had never "really been defined."

Interview question 5. *Tell me about the professional development experiences, focused on blended learning, you have participated in*. All 12 participants stated they had participated in professional development focused on blended learning. However, each participant offered contrasting views of blended learning training.

Victor recalled while in college, he had learned that blended learning was "scientifically a good idea," but struggled to recall a recent professional development event that explained "how to do blended learning." Adam shared that the professional development he attended was "about SAMR and which tech tools to use." Steve also stated he "learned how to use the SAMR idea at a PD [professional development] day," so he could "get better blended learning results." Although Lilly had participated in blended learning training she acknowledged "I couldn't tell you really what I learned."

Walter shared that his professional development experiences had helped him "understand blended learning." Walter pointed to his participation in observations of other teachers practicing blended learning as particularly beneficial. Likewise, Erica thought her observations of math teachers using online math resources "better prepared"

her to teach in a blended environment. Four respondents suggested that although they had participated in professional development sponsored by their schools, they were unclear about the practice of blended learning until they observed other teachers using blended practices, attended out-of-district professional development, or learned about the practice on their own. Adam had previously attended professional development specific to blended learning, however, it was not until he heard a keynote speaker at a conference talking about the theory of blended learning, that the practice was clear to him. Similarly, Deb recalled "sitting through PD after PD" regarding blended learning without ever learning about the theory of blended learning. It was not until after Deb read an article about blended learning that she understood the theory behind the practice. She concluded, "I wish I'd found that article sooner, I wouldn't have wasted so much time sitting in PD."

For all participants, learning how to use technology tools, such as devices, apps, and various online tools, was perceived as the focus of nearly every professional development on blended learning they attended. Arnold pointed out the professional development he had participated in was "never pedagogy driven" but instead was "tech skills driven." Sharing her experience with professional development, Bev stated "I can't say that blended learning's really ever been a phrase" that had been defined. Similarly, Camilla expressed that the "goal of blended learning" had not been defined in the professional development offered by her school.

Four participants stressed that the professional development they had received to support blended learning did not meet their professional needs. Camilla explained her district's professional development sessions on blended learning were usually conducted

by “teacher volunteers” who shared different “apps, extensions, or online resources they ran into at a conference.” Moreover, Camilla wished she had regular access to an instructional coach to support her use “of all the apps, extensions, and online resources she’d been shown over and over.” Steve felt that since his administration set professional development agendas without assessing his needs, he never had an opportunity to “learn what I really needed to learn about blended learning because no one ever asked what I needed.” Summarizing his professional development experiences, Arnold stated:

> So, it’s just this constant recycling of the same ideas because this person learned this thing from this person and then the next year that person presents the same thing to new people and it just turns into this big stale revolving door of the same ideas and it’s starting to make me crazy because I don’t need to learn how to make a Google form for the hundredth time.

Gloria argued the professional development planners at her school always “lumped everyone together” regardless of their “tech skills or teaching needs.”

Research question three. *What future professional development would high school teachers perceive as supportive to their practice of blended learning in the classroom?* The final two questions were designed to answer research question three by revealing high school teachers’ perceptions of future professional development they would find valuable for supporting blended learning.

Interview question 6. *What would be helpful to you in your next professional development session to support your blended learning practice?* Nine of 12 participants responded they would like to learn how to practice blended learning in their next professional development session. Camilla stated she would like to learn how to “actually

do blended learning" at her next professional development session. Furthermore, Camilla felt she would benefit from training that described "How might a class day be laid out using blended learning?" Walter also expressed he would like to participate in professional development that helped him to better understand how to practice blended learning. Additionally, Walter would like to learn how to integrate the "classroom and online elements" of blended learning. Arnold, frustrated with the focus on tech tools in previous professional development, also suggested strategies for "combining learning" he facilitated in class with "learning done outside of class" would benefit him. Although several participants perceived previous professional development had not included blended learning theory or pedagogy, Arnold and Adam were the only participants that desired future professional development that associated practice with pedagogy and theory.

Professional development, centered on content specific blended learning, was desired by several teacher respondents. Steve and Thomas both mentioned they would like to learn more about using blended learning in their social studies classes. Thomas felt he needed a "clearer picture" of how blended learning was practiced in his content area. While Steve wanted to learn how to design social studies lessons that incorporated more blended strategies. As math teachers, Erica and Adam were eager to attend future professional development events that provided information about how to use blended learning to differentiate Math classes. Deb and Camilla believed observing other teachers teaching their content through blended learning would be valuable. Deb added, however, she wanted post-observation time to process and reflect and time to "practice what she observed." Fine arts teacher Victor stated, "So, I want specific blended

learning. I want somebody to come in and say, 'here's how this works.'" The four science teacher respondents agreed that future professional development that provided science teachers with science specific training and resources would support their blended efforts.

Four participants perceived support from an instructional coach would assist their practice of blended learning. Victor thought having an instructional coach work with him one-on-one would help him to better understand how to use blended learning in his class. Likewise, Gloria perceived the individual attention provided by an instructional coach would be helpful, but added "it has to be the right one [coach]. I don't need somebody hovering over my work telling [the principal] what I do wrong." Lilly concluded that future professional development that focused on science would be helpful, but acknowledged having an instructional coach that could "co-teach blended learning" with her would be beneficial to her practice. Deb suggested she "didn't need much help" because she was "a little bit more advanced with technology" than many of her coworkers, but thought having an instructional coach available to show her how to "integrate everything together" would be helpful. Although some participants had access to district, or school-level instructional coaches, many teachers suggested, as Steve did, that "Coaches don't have much time in the classroom because they are busy administering systems."

Individualized professional development was requested by several participants. Bev felt confident in her use of blended learning strategies, so she did not want to attend another group training about "how to open an email." Instead, she desired training individualized to her needs. Bev suggested she would like training on how to utilize data

to better support student learning. While Steve wanted support tailored to his needs in the classroom. A majority of participants responded that they wanted professional development to be based on their actual needs, not their perceived needs. To illustrate this point, Gloria described how her building administration "decided everything we'd learn at PD and never asked what I needed." Arnold suggested he would benefit far more from "customized PD" instead of the "sit-n-get" training he had experienced in the past. Additionally, Arnold found irony in former professional development he had attended when he noted "PD leaders yell 'differentiate your classes,' in 'one-size-fits-all PD.'"

Interview question 7*. What would be the benefits of future professional development that emphasized a shared definition of blended learning and reasons for adopting blended learning?* Most participants responded that future professional development that stressed the definition of blended learning would be beneficial. Since Gloria felt blended learning had been "thrown at us without support," she believed a shared definition would help her and her colleagues better understand "what they were trying to do." Deb stated a clear definition of blended learning would encourage "other teachers to get on board." Steve argued training that included both the definition and reason for adopting blended learning would help to communicate a clear understanding of blended learning and add to his building's "shared education culture."

Four teacher respondents suggested their understanding of the definition of blended learning was clouded by the language used to describe the practice. Frustrated by the "annoying jargon" used in education, Adam suggested a shared definition would eliminate misunderstandings about blended learning and provide a "standard for what it means." Arnold stated confusion about "how to practice blended learning" could be

eliminated through professional development guided by a definitional focus. Arnold also believed training that conveyed why blended learning was valuable would support its use. Professional development that provided clear definitions of blended learning was welcomed by Walter and Camilla. Walter said he "tried flipping his class" several years ago, but struggled because he did not fully understand what blended learning meant. Furthermore, he suggested professional development that emphasized a clear definition would provide focus, eliminate multiple interpretations, and allow him and his colleagues to better practice blended learning.

Lilly argued since her school's administration had no expectation for her use of blended learning, she saw no reason to learn the definition. Likewise, Bev found little value in future professional development that underscored a shared definition of blended learning, as the definition was "already understood by all teachers" in her school. Thomas predicted professional development, focused on the definition of blended learning, would help to "better execute one-to-one" in his class. Believing blended learning was "just a buzzword," Victor advocated for future professional development that emphasized the strategies associated with blending learning since "foundations stay, but buzzword leave." Summarizing his final thoughts about professional development and the definition of blended learning, Victor concluded "I don't think that the term 'blended learning' is here to stay, but I think that technology in the classroom is here to stay."

Themes

Through initial analysis and coding of interview transcripts, emergent themes developed. Following a second phase of coding and analysis of the qualitative interview

data, new themes emerged. The four themes were interpretations, technocentric, instructional backing, and professionals' needs.

Interpretations. Interpretations was a theme which emerged after interview participants offered multiple interpretations of blended learning. Some teacher respondents interpreted blended learning as the use of varied resources in the classroom while others inferred blended learning meant learning through technology. Although a few interpretations of blended learning were similar, all 12 participants provided a different meaning of the term blended learning. As they had with blended learning, participants also interpreted the purpose of blended learning in many ways. Themes of independence, flexibility, choice, resources, and engagement were used to describe the purpose of blended learning which produced multiple interpretations of the phenomenon.

Technocentric. The quantity of participants' conversations dedicated to technology led to the technocentric theme. When discussing blended learning, participants spoke at great length about technology. The management and use of devices, particularly Chromebooks, was mentioned frequently by participants talking about blended learning. Theoretical and pedagogical philosophies associated with blended learning were only mentioned by a few participants. Instead, most respondents' discussions of blended learning were technology-centered and concentrated on device management, access to the internet, technology skills, apps, one-to-one initiatives, tech-focused professional development they had previously participated in, and the administrators' expectations for the use of technology. For most participants, the use of technology in the classroom was the dominate feature of blended learning.

Instructional support. Instructional support is a theme that emerged from the responses given by participants. Limited access to an instructional or technology coach was mentioned by several respondents as limiting to their practice of blended learning. A few participants recognized their understanding of blended learning would be supported by access to an instructional coach. Both online and physical resource allocation and management was cited as difficult by many participants. Help identifying quality resources would be welcomed along with support learning to use online resources with students. Differentiation was commonly mentioned as a benefit of blended learning, however, some teachers felt they needed support learning how to differentiate. Most participants viewed blended learning through the lens of instructional strategies and identified additional professional development focused on content specific blended learning would support their practice.

Professionals' needs. Professionals' needs is a theme which emerged after considering participant interview responses. The desire to have classroom, technology, and instructional needs met was reported by participants. Several respondents perceived their personal and professional experiences were rarely considered by professional development planners. Although many participants perceived the expectations of their building leaders was to use technology in their classrooms, several respondents suggested professional development opportunities that met their specific technology needs were rare and did not correlate with school leaders' expressed expectations for the use of technology. When professional development focused on technology, participants tended to perceive the training as ineffective as it did not meet their immediate needs or demonstrate why and how they needed to integrate blended learning instruction.

Summary

An analysis of the data was provided in Chapter Four. Both quantitative and qualitative data were examined to answer the three research questions. Participants' perceptions of blended learning, collected through the Blended Learning Experience Survey, were coded, analyzed, and, displayed through descriptive statistics including graphs. Participant responses to each of the seven interview questions were presented to reveal high school teachers' perceptions of the definition of blended learning, perceptions of previous professional development they have had to support blended learning, and perceptions of future professional development they would find valuable to support blended learning. Analysis of the qualitative data revealed four primary themes, presented at the end of the chapter.

In Chapter Five, the findings and conclusions of this phenomenological, mixed methods study are presented. Implications of the research on teachers' perceptions of blended learning is provided. Recommendations for future research about blended learning concludes the final chapter.

Chapter Five: Summary and Conclusions

The proliferation of blended learning has been well documented (Foulger et al., 2017; Gurley, 2018; Molnar et al., 2017), however, secondary school teachers' understanding of blended learning terminology and their preparation to teach through blended practices has been far less studied (Halverson et al., 2017). School districts, motivated by improved access to technology and calls for greater school accountability (Molnar et al., 2017), adopted technology integration and blended learning strategies to meet student needs (Gurley, 2018; Moore et al., 2017). The problem is, the definition of blended learning is often misunderstood by teachers (Gurley, 2018), thus the implementation and practice of blended learning often failed (Vaughan et al., 2017). Furthermore, Halverson et al. (2017) found high school professional development programs rarely supported teachers teaching blended learning.

The purpose of this phenomenological, mixed method study, was threefold. The first purpose was to determine high school teachers' perceptions of the term "blended learning." Gurley (2018) proposed the term blended learning was commonly misinterpreted by teachers. The second purpose was to understand how previous professional development experiences shaped the knowledge of the definition and practice of blended learning. Few studies answered how blended learning professional development and understanding of terminology impacted high school teachers' adoption and practice of blended learning (Moore et al., 2017; Spring & Graham, 2017). The third purpose of this study was to establish if future professional development, emphasizing blended learning terminology, would better support teachers' practice of blended

learning. Most secondary professional development programs focused exclusively on technology and failed to identify definitions of blended learning (Parks et al., 2016).

A review of the findings from the analysis of data explored in Chapter Four are presented at the beginning of this chapter. Conclusions, shaped by the findings and supported by previous studies reviewed in Chapter Two, is offered. Methods for improving blended learning professional development are offered in the Implications for Practice section and recommendations for future research are provided. The chapter concludes with a final summary of the study.

Findings

A mixed method design was employed to investigate teachers' perceptions of blended learning terminology and professional development. Quantitative and qualitative data were used to answer the three research questions that guided this study. Quantitative data, collected from participant responses to the Blended learning Experience Survey in the first phase of the study, were used to develop the interview questions for the second phase of the study. Analysis of data uncovered teachers' perceptions of the definition of the term "blended learning," revealed teachers' perceptions of how previous professional development experiences shaped their knowledge of the definition and practice of blended learning, and identified future professional development high school teachers perceived as supportive to their practice of blended learning.

Research question one. *What do high school teachers perceive as the definition of blended learning?* Analysis of participants' responses revealed high school teachers perceived blended learning to mean many things. Teachers' definitions of blended learning fell into six distinct clusters: (a) the combination of face-to-face learning and

online learning, (b) the use of technology to provide expanded learning opportunities, (c) the use of technology to support teachers' professional practices, (d) the use of technology for the dissemination of resources, (e) the use of technology to replace face-to-face instruction, and (f) the use of an assortment of non-technology resources.

Participants' perceptions of the effects of blended learning further revealed high school teachers' opinions of the definition of blended learning. Responding to the impact of blended learning on teachers and students, participants cited several positive effects of blended learning, including increased differentiation, enhanced feedback, student empowerment through choice, new data collection methods, improved communication, greater flexibility, increased access to online resources, and heightened student engagement. Participants also noted negative impacts of blended learning including the amount of time students were perceived to waste online, students' inability to practice sound online literacy, teachers' inability to use technology, and confusion over what to teach online.

Research question two. *What are high school teachers' perceptions of previous professional development experiences that support blended learning instruction?* Examination of qualitative data revealed teachers perceived previous blended learning professional development primarily emphasized how to use technology. All 12 participants stated they had participated in blended learning professional development, however, only two respondents mentioned the professional development they attended was beneficial to their understanding of the definition and practice of blended learning. Several participants suggested they had attended district sponsored professional

development, specifically focused on blended learning, but asserted they did not learn about theory, practice, or pedagogy associated with blended learning.

Several participants perceived building leaders' expectations for teachers to practice blended learning were minimal. However, teachers' perceived building leaders expected technology to be used in classrooms. Financial expenses incurred by districts from the purchase of technology equipment was believed by many teachers to be the driving factor behind building leaders' expectations for using technology in the classroom. Only one participant felt their building leader expected blended learning to be practiced, however, the participant perceived professional development did not provide adequate training to support effective blended learning.

Research question three. *What future professional development would high school teachers perceive as supportive to their practice of blended learning in the classroom?* High school teachers perceived future professional development that included how blended learning was achieved would support their practice of blended learning. Participants suggested professional development that emphasized how to combine and organize the online and face-to-face elements of blended learning would also be beneficial. Two teachers stated they desired professional development that related pedagogical and theoretical principles of blended learning to the practice of blended learning.

Further analysis of responses revealed teachers desired professional development that included content specific blended learning strategies, support from instructional coaches, and respect for teachers' individual needs. Participants who taught social studies, science, math, and fine arts believed content specific training and opportunities to

observe blended learning in one's content area would increase knowledge of blended learning. Four teachers perceived co-teaching with an instructional coach would also provide support for content specific blended learning. Professional development tailored to individual needs was desired by most participants. Teachers perceived previous professional development was disconnected from relevant instructional strategies, consequently, training rarely met individuals' specific needs. Participants proposed acknowledgement of individuals' technology and instructional needs would support their practice of blended learning.

Teachers desired professional development that defined blended learning and provided reasons for its implementation. Six participants indicated their understanding of blended learning would be enhanced through professional development that emphasized clear definitions of blended learning. Two teachers, however, perceived little value in future professional development that stressed definitions of blended learning. While one participant believed blended learning was a fad and future professional development should emphasize technology compatible learning strategies.

Conclusions

The research questions were developed to stimulate a deeper investigation of the blended learning experiences of teachers (Creswell & Creswell, 2018). Riel et al. (2016) proposed teachers' perceptions about misinterpretations concerning terminology and blended learning pedagogy needed to be understood. Investigating the perceptions of high school teachers' blended learning experiences provides understanding and direction for educators implementing blended learning approaches and informs blended learning professional development planners. Additionally, investigating the perceptions of high

school teachers' blended learning experiences bridges gaps and shortcomings in the research on blended learning (Gurley, 2018; Halverson et al., 2017; Shand & Glassett Farrelly, 2017; Vaughan et al., 2017).

Research question one. *What do high school teachers perceive as the definition of blended learning?* Consistent with previous research (Gurley, 2018; Spring & Graham, 2017; Vaughan et al., 2017), participants' perceptions of the definition of blended learning suggested there was no shared definition of blended learning. Previous researchers (Gurley, 2018; Spring & Graham, 2017) acknowledged debate over the definition of blended learning was often clouded by arguments centered on the specific amount of time students learned online versus the amount of time they learned in class. However, a broad definition of blended learning refers to any instructional model that combines online learning with face-to-face learning (Horn & Staker, 2015). The near complete absence of participants' identification of the face-to-face learning component, essential within the definition of blended learning, and contrasting participant responses, demonstrated substantial "definitional ambiguity" (Dziuban et al., 2018, p. 1) existed among teachers participating in this study.

Participants' definitions of blended learning were technocentric, seldom acknowledging the face-to-face learning associated with general definitions of blended learning (Horn & Staker, 2015). Perceptions of the impact of blended learning on students and teachers focused on technology, not the impact of pedagogical practices connected to face-to-face and online learning. Guided by the misinterpretation that blended learning conveyed the mere use of technology (Riel et al., 2016), some participants perceived the one-to-one programs adopted by their schools produced

blended learning environments. However, one-to-one programs are not synonymous with blended learning (Horn and Staker, 2015). Several participants presumed they were practicing blended learning, when in fact technology-rich environments (Moore et al., 2017) had been created. Although most participants identified students' and teachers' use of technology increased feedback, differentiation, choice, data collection, communication, flexibility, and engagement, the perceived effects of technology-rich practices did not communicate student learning or blended learning had occurred since the face-to-face factor of blended learning was not discussed (Vaughan et al., 2017).

Quality implementation of blended learning required a shared understanding of the phenomenon (Vaughan et al., 2017), however, high school teachers in this study, including those who taught in the same school, did not share a common understanding of blended learning. The absence of participants' shared definition of blended learning, at the school building or district level, aligned with the results of previous studies (Vaughan et al., 2017). Broad definitions of blended learning tolerate greater variations and individualization of instruction; however, school building or district definitional agreement was acknowledged as vital to sustaining blended learning initiatives (Spring & Graham, 2017). Participants' technocentric interpretations of blended learning may have been attributed to the lack of clear integration frameworks, which no participant referenced in their interviews; the lack of clear integration frameworks is consistent with previous findings on the role of integration frameworks to support teachers' understanding of blended learning (Vaughan et al., 2017).

Research question two. *What are high school teachers' perceptions of previous professional development experiences that support blended learning instruction?* High

quality blended learning professional development included active learning (Halverson et al., 2017; Parks et al., 2016), increased time for teacher learning due to the technological elements related to blended teaching and learning (Dawson & Fitchtman Dana, 2018), addressed fears and concerns (Lawrence and Tar, 2018), supported technology competences, identified reasons for resistance to change (Halverson et al., 2017), and combined technology, pedagogy, and content (Shand & Glassett Farrelly, 2017). A direct correlation to the success of blended programs was found when pre-service and in-service teachers participated in the correct type and amount of professional development to prepare them to practice blended learning (Gurley, 2018). Analysis of the professional development experiences of teacher participants indicated most professional development was ineffective in supporting blended learning instruction.

Participants perceived previous professional development primarily emphasized the use of technology devoid of discussions of pedagogy and the application of blended learning to their content area. This confirmed previous findings by Parks et al. (2016) who concluded most high school level professional development focused on technology and failed to connect pedagogical adjustments teachers needed to make when transitioning to blended learning. The emphasis on technology in previous professional development was potentially the result of professional development planners' technocentric misinterpretations of the definition of blended learning (Horn & Staker, 2015) and the lack of institutionally shared definitions of blended learning (Gurley, 2018; Vaughan et al., 2017).

As proposed by Wehbe (2019) the results of this study indicated previous professional development had not met participants' immediate individual blended

learning needs. Cochran and Brown (2016) recommended professional development providers engage adult learners in authentic learning, relevant to immediate needs. Participants perceived professional development, typically planned by building leaders, did not meet teachers' needs, consequently, the impact on blended learning practice was minimal. As adult learners, teachers were oriented to learning when they perceived solutions to their immediate needs would be found (Knowles et al., 2015). However, participants believed professional development topics were often recycled from previous professional development experiences, thus training was not relevant to the immediate needs of teachers.

Research question three. *What future professional development would high school teachers perceive as supportive to their practice of blended learning in the classroom?* Based on the findings of this study, teachers perceived future blended learning professional development that included a definition of the practice, demonstrated how to carry out the practice, and addressed the needs of adult learners would better support educators' understanding and implementation of blended learning. As suggested by Dziuban et al. (2018) participants' lack of a codified understanding of the term "blended learning" limited the effectiveness of previous professional development and the practice of blended learning. Participants' desire for definitional understanding could lead to a transition from a technocentric understanding of blended learning (Harrell & Bynum, 2018) to a recognition of the combination of face-to-face learning and online learning which is essential to quality blended learning (Gurley, 2018).

Established earlier in this study, previous professional development focused predominantly on the use of technology and rarely concentrated on how to practice

blended learning. Participants expressed the desire for future professional development focused on how to accomplish blended learning. Professional development that modeled blended learning (Parks et al., 2016), promoted the use of active learning (Dawson & Fitchman Dana, 2018), demonstrated how to use technology (Harrell & Bynum, 2018), and included pedagogical best practices (Parks et al., 2016) could meet teachers' requests for professional development that explained how to practice blended learning.

In line with previous findings (Storey & Wang, 2017), teachers in this study were frustrated with professional development that did not consider their needs and experiences. Participants' desired to have their needs met and experiences appreciated, as confirmed in adult learning theory (Knowles et al., 2015). Teachers want future professional development to emphasize the reason for learning about blended learning (Cochran & Brown, 2016), explain why there is a need for new instructional strategies (Knowles et al., 2015), recognize their capabilities (Cochran & Brown, 2016; Knowles et al., 2015), acknowledge their experiences (Knowles et al., 2015), offer solutions to their needs (Storey & Wang, 2017), and recognize adults are internally motivated to learn (Ryan & Deci, 2018).

Implications for Practice

The findings of this study have important implications for blended learning professional development and the practice of blended learning. The first recommendation supports blended learning professional development planners to better plan and execute professional development that meets the needs of high school teachers. The second recommendation provides instructional support for high school teachers practicing blended learning.

Five-step blended learning professional development planning guide. The findings of this study revealed misinterpretations about the definition and practice of blended learning were common to nearly all teachers. Furthermore, the results of this study showed teachers' misconceptions of blended learning originated in poorly devised professional development that did not stress the adoption of a universal definition of blended learning and focused on the use of technology over the integration of technology with face-to-face learning. Misconceptions about the meaning and practice of blended learning could be limited through professional development planners' use of a planning guide to steer early blended learning professional development. Influenced by Knowles' adult learning theory (Knowles et al., 2015), the Five-step Blended Learning Professional Development Planning Guide, created by the researcher, is intended to be used by district professional development planners to plan blended learning professional development for adult learners. A graphical representation of the five-step blended learning professional development planning guide is shown in Figure 20.

The first two steps of the planning guide are intended to prepare professional development designers, through informal assessments, to better understand the teachers receiving training. The first step in planning for blended learning professional development will be to assess teachers' immediate needs (Knowles et al., 2015) and respond with appropriate support. Although the purpose of the guide is to support blended learning professional development, if teachers perceived their immediate non-blended learning needs were not considered first (Storey & Wang, 2017), blended learning professional development might be rejected (Knowles et al., 2015).

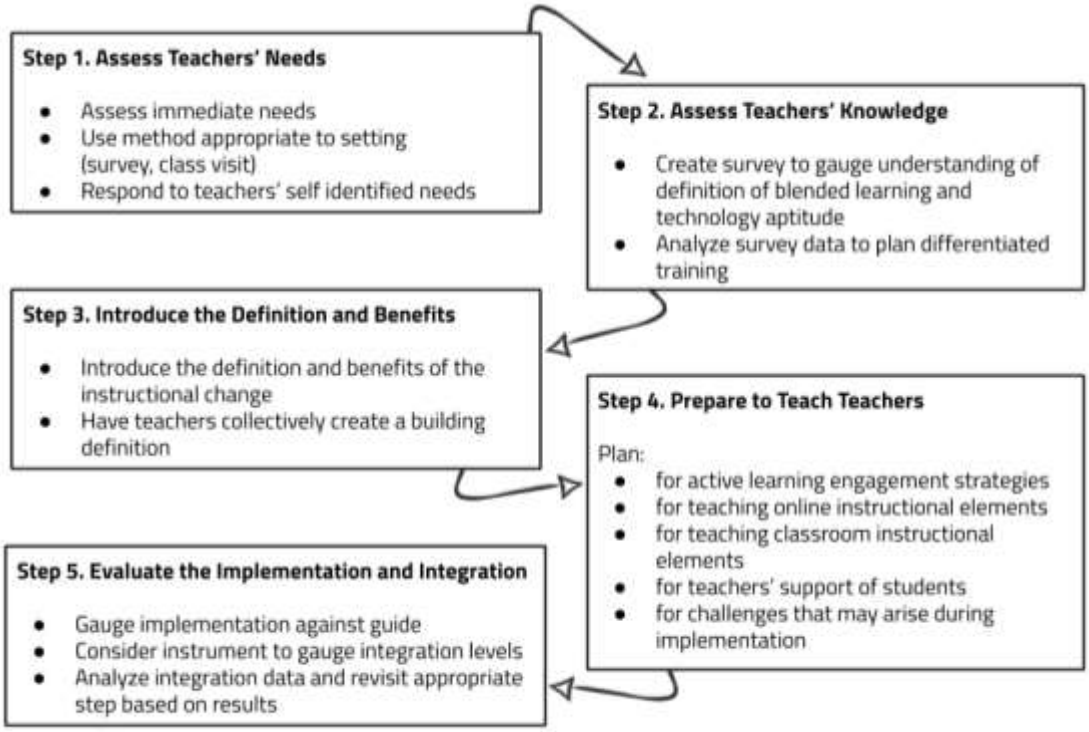

Figure 20. Five-step blended learning professional development planning guide.

The second step includes the use of a survey to gauge teachers' definitional awareness and technology aptitudes. Assessing teachers' prior connection to blended learning and familiarity with technology considers teachers' lived experiences (Knowles et al., 2015). The second step survey results should inform professional development planning and offer evidence for differentiated training. The remaining three steps of the guide focus planners' attention on crucial blended learning professional development needs highlighted in the findings and conclusions of this study.

The benefits of instructional changes and an introduction to the definition of blended learning are called for in the third step of the guide. Cochran and Brown (2016) stressed the importance of providing the benefits and definition of blended learning to

teachers to create a readiness to learn (Knowles et al., 2015). The introduction of the definition of blended learning should include an opportunity for teachers to assist in the creation of a school or district definition of blended learning to promote universal understanding of the practice, guide future professional development, and provide a common language.

Step four of the guide is intended to be used by district professional development planners to prepare long-term, sustained, professional development to integrate blended learning. Planners should consider strategies that engage teachers in authentic learning activates (Storey & Wang, 2017) such as modeling blended learning through engagement in blended learning, observations of teachers executing content specific blended learning, time for teachers to process and discuss their experiences with other teachers (Knowles et al., 2015; Shi, 2017), and modeling technology management and use. Plans for teaching teachers how to teach online, design online learning, and analyze data generated from digital sources should also be considered during this step. Additionally, during this step, planners should consider how they will support teachers as they assist students through the introduction to blended learning. During this phase of the process, planners should be prepared for challenges that may result from teachers' confusion about what students should learn in class and what should be learned online, the organization of resources, and apprehension using and managing devices with students. During step four, professional development planners will teach teachers how to practice blended learning.

The final step is intended to encourage planners to contemplate how they will evaluate the success of blended learning integration, the professional development provided to support the practice, and respond to complications. Blended learning

implementation should be measured against the preparations and processes outlined in the five-step guide. Planners, however, should consider the integration instrument used to gauge levels of blended learning integration based on the specific integration criteria they are seeking to measure. Once integration level data have been analyzed, actions to handle challenges revealed through the data can be processed by revisiting the appropriate planning steps in the planning guide.

Instructional support for teachers practicing blended learning. The findings of this study revealed teachers perceived access to instructional coaches would amplify their blended learning knowledge, as well as support instructional needs associated with the practice of blended learning. School districts should invest in school building instructional coaches to support long-term instructional goals and sustain blended learning initiatives. Although a considerable financial investment, the projected growth of blended learning (Gurley, 2018; Moore et al., 2017) and the added instructional challenges recognized in the findings of this study, compel school districts to consider adding building level instructional coaches.

Participants in this study suggested blended learning produced instructional challenges they were not equipped to handle due to limited experience or knowledge. Challenges identified by teachers included designing online learning, using technology, vetting online resources, balancing classroom and online teaching, and using digital data to drive differentiation of instruction. Teachers also perceived opportunities to co-teach with an instructional coach and individualized professional development provided by an instructional coach, would support their blended learning practice.

Recommendations for Future Research

This study focused on teachers' perceptions of blended learning terminology, previous professional development, and future professional development needs. Although the results of this study added to the knowledge of blended learning professional development, further research is needed to support professional development planners and the teachers they support. Additionally, further research on building leader fidelity to blended learning professional development and the effects of blended learning professional development on learner outcomes is needed.

Professional development planner perceptions of the definition. Future studies should focus on professional development planners' perceptions of blended learning to enhance the quality of professional development. Teachers' perceptions of the definition of blended learning and professional development experiences may provide insight into professional development planners' understanding of the definition and practice of blended learning. However, to avoid reaching false conclusions about planners' understanding, research centered on professional development planners' perceptions of the definition of blended learning would identify planners' strengths and opportunities for learning.

District and building leader fidelity to blended learning professional development. The findings of this study suggest future research focused on leadership fidelity to blended learning professional development is justified. Analysis of data collected during the teacher interview phase of this study indicated several teachers perceived building leaders' expectations for practicing blended learning to be ambiguous. Investigating leadership fidelity to blended learning professional development would

shed light on leaders' understanding of blended learning and commitment to professional development.

The effects of blended learning professional development on learner outcomes. Researchers have investigated the effects of blended learning professional development on teacher outcomes, however, little research has been conducted on the effects of professional development on learner outcomes (Dawson & Fitchtman Dana, 2018). Research should be undertaken to understand the effects of blended learning professional development on student success. Longitudinal studies focused on the cause-and-effect of professional development and learner outcomes would provide a better understanding of how changes to blended learning professional development delivery influence student achievement.

Summary

The background of the growth of blended learning and difficulties encountered when teachers did not share a clear definition of blended learning (Gurley, 2018) were presented in Chapter One. Adult learning theory, the theoretical framework that shaped this study, was a suitable lens through which to view the study of blended learning professional development because the theory focuses on the process of adult learning (Knowles et al. 2015). The focus of this study was Southwest Missouri high school teachers' perceptions of the definition of blended learning and professional development experiences that reinforced their understanding of the practice of blended learning.

A review of the literature was presented in Chapter Two. An extensive examination of Knowles' adult learning theory and the six principles of adult learning were provided (Knowles et al. 2015). Essential elements of blended learning were

reviewed, including terminology, benefits, challenges, models, and implementation and integration practices. An examination of pre- and in-service teacher professional development practices concluded the chapter.

The methodology of the study was described in Chapter Three. Guided by the research questions, a mixed method approach was selected by the researcher to examine teachers' perceptions of blended learning terminology and professional development (Creswell & Creswell, 2018). The quantitative and qualitative instruments were designed by the researcher to answer the three research questions. Survey data from phase one of the study were used to design the interview questions used in phase two of the study (Mills & Gay, 2018).

After collection, the data were analyzed and displayed in Chapter Four with respect to the three research questions. Quantitative data from teachers' responses to the Blended Learning Experience Survey were analyzed and presented using descriptive statistics (Bluman, 2017). Four themes emerged from analysis of the qualitative data collected during the teacher interviews. The four themes were: interpretations, technocentric, instructional support, and professionals' needs.

Key findings and conclusions of the study were presented in Chapter Five. Teachers' perceptions of the definition of blended learning, teachers' perceptions of previous professional development, and teachers' perceptions of future professional development needs were acknowledged in the findings of the three research questions. Based on findings and the theoretical framework that shaped this study, implications for practice included the creation of a blended learning professional development planning guide and the need for instructional coaches to support teachers' practice of blended

learning. Recommendations for future research included the examination of professional development planners' perceptions of the definition and practice of blended learning, school leader fidelity to blended learning professional development, and the effects of blended learning professional development on learner outcomes.

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Appendix A

Blended Learning Experience Survey

Five-point Likert scale
Strongly Agree Agree Uncertain Disagree Strongly Disagree

1. What does the term “blended learning” mean?
2. The term “blended learning” is commonly understood by high school teachers.
3. The terms “blended learning” and “one-to-one” (1:1) are synonymous.
4. The use of a learning management system such as Canvas, Blackboard, or Schoology is necessary for blended learning to take place.
5. An element of blended learning is online learning that comprises some aspects of student control over the place, time, and pace of learning.
6. A teacher creates a blended learning environment by posting all class material online, using digital textbooks, and having students write in Google Docs.
7. Blended learning supports differentiated instruction within the high school classroom.
8. Students learn best when a variety of instructional approaches are used within the classroom.
9. Incorporating a blended learning approach to instruction will increase high school student achievement.
10. High school teachers are equipped with the necessary resources that may support a blended learning instructional approach.
11. High school teachers have been trained to incorporate a blended learning instructional approach within the classroom.

12. Professional development, focused on blended learning, has included opportunities to observe other teachers practicing blended learning instruction.
13. High school administrators expect to see blended learning instruction in my classroom.
14. Professional development, focused on blended learning, has included training in both pedagogy and technology.
15. Professional development has been provided within the last two years that included or focused on blended learning.
16. If the district offered blended learning workshops outside of the contracted day, I would attend.
17. Future professional development that emphasized an agreed upon definition of blended learning would support high school teachers' understanding of blended learning.
18. Providing high school teachers professional development about blended instruction, using blended instructional practices, would be beneficial by modeling the blended learning experience for teachers.
19. Professional development that included reasons for adopting blended learning would promote further use of blended instruction.
20. I would be interested in ongoing blended learning professional development with my colleagues to design instruction, implement the design, reflect on outcomes and refine my use of blended learning instruction.

Appendix B

Blended Learning Experience Interview Guide

Demographic information

Name:

Years in education:

Content area:

RQ 1. What do high school teachers perceive as the definition of blended learning?

1.What does the term blended learning mean to you?

2. How has blended learning impacted you as a teacher?
    *Additional if needed: such as preparation, communication, and evaluation
    *Additional if needed: Possibilities/ concerns

3. Based on your experiences, how do you feel blended learning impacts students?
    *Additional if needed: Specific examples or lessons

RQ 2. What are high school teachers' perceptions of previous professional development experiences that support blended learning instruction?

4. What are school leaders' expectations for teachers to practice blended learning in your school?

5. Tell me about the professional development experiences, focused on blended learning, you have participated in.

RQ 3. What future professional development would high school teachers perceive as supportive to their practice of blended learning in the classroom?

6. What would be helpful to you in your next professional development session to support your blended learning practice?

7. What would be the benefits of future professional development that emphasized a shared definition of blended learning and reasons for adopting blended learning?

Appendix C

Site Permission to Conduct Research Request

Dear [redacted],

The purpose of this letter is to seek permission to conduct research in the [redacted] Public School District. I am currently enrolled in the doctoral program for Instructional Leadership at Lindenwood University, under the guidance of Dr. Kathy Grover. The focus of my dissertation research is to determine if there is widespread understanding of the term "blended learning" among secondary teachers and how previous professional development shapes teachers' knowledge of the definition and practice of blended learning.

To conduct my research, I would like to invite all high school teachers to complete an online Blended Learning Experience Survey. Additionally, I would like to invite a maximum of three high school teachers to participate in an individual 45-minute interview session. The interview session will be audio recorded. The interview phase of this study is intended to gather teachers' perceptions about blended learning terminology, professional development teachers have participated in, and teachers' future professional development needs.

Approval of this study will be received from the Internal Review Board of Lindenwood University before research is conducted. Personal information acquired through this study will be coded to preserve the privacy of all participants. All data will be presented anonymously. Participation in this study is completely voluntary and subjects may withdraw at any time

I appreciate the [redacted] School District's consideration of participation in this study. If you have any questions concerning the survey or interview procedures, please feel free to contact me at [redacted] or via email at [redacted] or Dr. Kathy Grover via email at [redacted].

Sincerely,

Gregory A. Katzin

Gregory A. Katzin

Appendix D

Institutional Review Board Approval to Study

Jul 17, 2019 11:29 AM CDT

RE:
IRB-20-5: Initial - A Phenomenological Study of Teacher Perceptions of Blended Learning: Definition, Adoption, and Professional Development

Dear Gregory Katzin,

The study, A Phenomenological Study of Teacher Perceptions of Blended Learning: Definition, Adoption, and Professional Development, has been Approved as Exempt.

Category: Category 1. Research, conducted in established or commonly accepted educational settings, that specifically involves normal educational practices that are not likely to adversely impact students' opportunity to learn required educational content or the assessment of educators who provide instruction. This includes most research on regular and special education instructional strategies, and research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.

The submission was approved on July 17, 2019.

Here are the findings: Regulatory Determinations

- This study has been determined to be minimal risk because the research is not obtaining data considered sensitive information or performing interventions posing harm greater than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests.

Sincerely,
Lindenwood University (lindenwood) Institutional Review Board

Oct 1, 2019 11:27 AM CDT

RE:
IRB-20-5: Modification - A Phenomenological Study of Teacher Perceptions of Blended Learning: Definition, Adoption, and Professional Development

Dear Gregory Katzin,

The study, A Phenomenological Study of Teacher Perceptions of Blended Learning: Definition, Adoption, and Professional Development, has been approved as Exempt.

Category: Category 1. Research, conducted in established or commonly accepted educational settings, that specifically involves normal educational practices that are not likely to adversely impact students' opportunity to learn required educational content or the assessment of educators who provide instruction. This includes most research on regular and special education instructional strategies, and research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.

The submission was approved on October 1, 2019.

Here are the findings: Regulatory Determinations

- This modification entails a minor revision to the research site list and approval documentation. This modification does not alter the previously approved risk determination.

Sincerely,
Lindenwood University (lindenwood) Institutional Review Board

Appendix E

Site Permissions

School District 1 Site Permission:

I would love to help you out. Let me know what you need.

Respectfully,
[redacted]
Superintendent of Schools
[redacted]

School District 2 Site Permission:

Mr. Katzin,

The [redacted] School District would be honored to participate in this research project. Please let me know what you need from me to move forward with this process.

Have a great day,
[redacted]

School District 3 Site Permission:

Mr. Katzin,

I wish the very best as you seek input from our High School staff; however, I would request an overview of your findings once the research is completed. This subject is intriguing and something of interest.

Respectfully,
[redacted]
Superintendent of Schools

School District 4 Site Permission:

Gregory,

[redacted] passed along your request for our participation in your study. I am giving you approval for [redacted] Schools to participate in your study. I would ask you reach out to our high school principal [redacted] for further assistance. I have copied [redacted] in my response. If I can be of further assistance please let me know. Good luck with your research!

Sincerely,
[redacted]
Asst. Superintendent of Instructional Services
[redacted]

Appendix F

Invitation to Teachers to Participate in the Study

My name is Greg Katzin, and I am currently enrolled in the doctoral program for Instructional Leadership at Lindenwood University. The focus of my dissertation research is to determine if there is widespread understanding of the term "blended learning" among secondary teachers and how previous professional development shapes teachers' knowledge of the definition and practice of blended learning.

Permission to conduct research in the [redacted] School District has been received from your superintendent, [redacted]. To conduct my research, I would like to invite all high school teachers to complete an online Blended Learning Experience Survey found at the following link: [redacted]
The survey should take no more than 10 minutes to complete.

Additionally, I would like to invite a maximum of three high school teachers from your school, to participate in an individual 45-minute interview session. The interview session will be audio recorded. The interview phase of this study is intended to gather teachers' perceptions about blended learning terminology, professional development teachers have participated in, and teachers' future professional development needs. If you are interested in being considered, and possibly contacted to take part in the interview phase of the study, please provide your name and contact information at the end of the survey. *Your contact information will not be associated with your survey responses.*

Personal information acquired through this study will be coded to preserve the privacy of all participants. All data will be presented anonymously. Participation in this study is completely voluntary and subjects may withdraw at any time. Please see the Informed Consent notice at the beginning of the survey for further information.

I appreciate the [redacted] School District for assisting in this study and thank all the teachers who will offer their perceptions of blended learning in advance. If you have any questions concerning the survey or interview procedures, please feel free to contact me at [redacted] or via email at [redacted] or Dr. Kathy Grover via email at [redacted].

Sincerely,

Gregory A. Katzin

Gregory A. Katzin

Appendix G

Informed Consent for Survey

LINDENWOOD

Survey Research Information Sheet

You are being asked to participate in a survey conducted by Gregory Katzin under the guidance of Dr. Kathy Grover, faculty supervisor at Lindenwood University. We are doing this study to determine if there is widespread understanding of the term "blended learning" among secondary teachers and how previous professional development shapes teachers' knowledge of the definition and practice of blended learning. You will be asked questions about your understanding of the term "blended learning," blended learning professional development you have received, and blended learning professional development you would like in the future. It will take about 10 minutes to complete this survey.

Your participation is voluntary. You may choose not to participate or withdraw at any time by simply not completing the survey or closing the browser window.

There are no risks from participating in this project. We will not collect any information that may identify you. There are no direct benefits for you participating in this study.

WHO CAN I CONTACT WITH QUESTIONS?

If you have concerns or complaints about this project, please use the following contact information:

Gregory Katzin: [redacted]

Dr. Kathy Grover: [redacted]

If you have questions about your rights as a participant or concerns about the project and wish to talk to someone outside the research team, you can contact Michael Leary (Director - Institutional Review Board) at 636-949-4730 or mleary@lindenwood.edu.

By clicking the link below, I confirm that I have read this form and decided that I will participate in the project described above. I understand the purpose of the study, what I will be required to do, and the risks involved. I understand that I can discontinue participation at any time by closing the survey browser. My consent also indicates that I am at least 18 years of age.

You can withdraw from this study at any time by simply closing the browser window. Please feel free to print a copy of this information sheet.

Appendix H

Informed Consent for Interview

LINDENWOOD

Research Information Sheet

You are being asked to participate in a research study. We are doing this study to determine if there is widespread understanding of the term "blended learning" among secondary teachers and how previous professional development shapes teachers' knowledge of the definition and practice of blended learning. During this study you will participate in a face-to-face interview. It will take about 45 minutes to complete this study.

Your participation is voluntary. You may choose not to participate or withdraw at any time.

There are no risks from participating in this project. There are no direct benefits for you participating in this study.

We will not collect any data which may identify you.

We will do everything we can to protect your privacy. We do not intend to include information that could identify you in any publication or presentation. Any information we collect will be stored by the researcher in a secure location. The only people who will be able to see your data are: members of the research team, qualified staff of Lindenwood University, representatives of state or federal agencies.

Who can I contact with questions?

If you have concerns or complaints about this project, please use the following contact information:

Gregory Katzin: [redacted]

Dr. Kathy Grover: [redacted]

If you have questions about your rights as a participant or concerns about the project and wish to talk to someone outside the research team, you can contact Michael Leary (Director - Institutional Review Board) at 636-949-4730 or mleary@lindenwood.edu.

Appendix I

Online Resources Named by Participants

Online Resource	Frequency
G Suite for Education[a]	12
Kahoot!	6
YouTube	5
Canvas	5
Quizlet	5
Ted Talks	3
Google Classroom	3
PhEt Simulations	2
Skype	2
Khan Academy	2
Screencastify	1
Twitter	1
Anchor FM	1
cK-12	1
Coggle	1
Flipgrid	1
Nearpod	1
Remind	1
Discovery Education	1
National Archives Online	1
Google Maps	1
Adobe Cloud	1
Oregon Trail	1
Tinkercad	1

Note. Only a participant's first reference to an online resource was calculated in the frequency.

[a]G Suite for Education included the online tools Draw, Drive, Docs, Forms, Gmail, Sheets, and Slides.

Vita

Gregory A. Katzin received his Bachelor of Science in Secondary Education, Social Studies, in 2002 from Missouri State University. After two years as a graduate assistant in the Department of History at Missouri State University, Gregory earned his Master of Arts in Modern European History in 2004. Gregory began teaching history in the Logan-Rogersville School District in 2005. While teaching high school history, Gregory also taught history at Missouri State University as an adjunct professor and in 2011 he became a National Board Certified teacher. Since 2016, Gregory has been an instructional technology coach in the Logan-Rogersville School District. Gregory has presented at local school districts, regional, national, and international conferences, on topics including supporting teachers' understanding of blended learning, digital feedback, and differentiated learning through technology.