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High School Teacher Perceptions of Blended Learning

Stephen Raymond
Walden University

Walden University

College of Education

This is to certify that the doctoral dissertation by

Stephen Chandler Raymond

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Review Committee
Dr. Michael Marrapodi, Committee Chairperson, Education Faculty
Dr. Christopher Rasmussen, Committee Member, Education Faculty
Dr. Charlotte Redden, University Reviewer, Education Faculty

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Abstract

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EdS, Walden University, 2012

MA, National University, 2004

BA, Chaminade University, 2002

Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Educational Technology

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Abstract

Blended learning technology integration by teachers can be influenced by a number of factors and is not simply a matter of following the dictate of an administrator or supervisor. A lack of knowledge exists as to what extent a high school teacher's perception of blended learning influences his or her implementation decision. The purpose of this qualitative study was to explore the perceptions of high school teachers regarding their decision to implement blended learning pedagogy in their classroom. Social cognitive theory and the technology acceptance model were used as the conceptual framework for this study. The key research questions were used to examine the perceived ease of use and the perceived usefulness of technology and their effect on the decision to implement blended learning pedagogy. Participants were 11 teachers with access to blended learning pedagogy from 4 different school sites. Data sources were semistructured interviews. Data were analyzed using a multistage, open coding approach, identifying themes of positive and negative influencers of perceptions of blended learning pedagogy. Results indicated that teachers have a high regard for classroom technology use and recognize the potential value of blended learning with the ability to individualize instruction as the strongest positive aspect. The results also indicated that the key negative influences on perception were lack of professional development and technology resource support, i.e., Internet availability and computer access. This study creates positive social change by providing all high school education stakeholders knowledge of the influencers of teacher perceptions of blended learning to address potentially negative influences, increase the likelihood of classroom adoption, and reduce wasted resources.

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Dedication

This dissertation is first and foremost dedicated to my wife Kathleen. Your love, support, and encouragement have made this accomplishment possible. It is because of you that I was able to complete this journey. To my children, Elizabeth, Chandler, and Samuel who make me proud everyday with their devotion to family, educational accomplishment, and work ethic.

I also dedicate this dissertation to all of the teachers who work diligently to integrate technology in the classroom, often as a result of their own internal motivation, to make education relative to today's students and their needs, wants, and desires.

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Thank you for your patience, frankness, and responsiveness, Dr. Michael Marrapodi, my mentor and committee chair. Your balance between professionalism and personal communication made this journey smoother than I know it would have been without you. I also wish to thank the 2nd committee member, Dr. Christopher Rasmussen whose extra eyes on the process helped to refine the dissertation and minimize errors in the final report, and the URR, Dr. Charlotte Redden for the keen eye and expertise at ensuring the dissertation not only met the university's high standards but also was at its best for publication.

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Chapter 1: Introduction to the Study

While preparing classroom lessons in math, science, history, or English, teachers have many options at their disposal of how to present material (Cochrane, 2014). One learning material delivery option, electronic, comes in a variety of forms and each teacher decides, from the resources available, which to include and which not to include (Comi, Argentin, Gui, Origo, & Pagani, 2017). Collectively these electronic learning materials are known as educational technology (Spencer, 2017). Personal and professional experiences of the teacher have the greatest influence on their perceived usefulness of the resources, and ultimately the decision to implement educational technology resources (Nikolopoulou & Gialamas, 2016). An example of the experience influencing the teacher is previous use of learning technology and the extent to which the teacher's professional development prepared him or her for technology use in the classroom (Archambault et al., 2016). Further challenges facing teachers that influence their decision on whether or not to adopt technology is the availability of support from administrators, the information technology (IT) department, or from fellow educators (Cochrane, 2014).

With advances in electronic technology have come a myriad of pedagogies for teachers to chose from to incorporate technological tools (Liu, Ritzhaupt, Dawson, & Barron, 2017). Liu, Ritzhaupt, Dawson, and Barron stated that from simple technology like calculators, to advanced technology like virtual reality viewers, teachers are expected to know what is best for their classes and each student. An example of pedagogy that involves the marrying of electronic technology with typical classroom teacher facilitation is blended learning. Blended learning, what Oliver and Stallings (2014) defined as any

instruction where the student is in a school location with supervision and receiving a portion or his or her entire curriculum through an online resource, has provided many opportunities for students to access course information that is typically more current and relevant to his or her learning needs.

In this study, I addressed the following: perceptions based on previous technology use, experience of the teacher, and to what extent that experience influences the teacher's decision to implement blended learning style curriculum in his or her classroom at the high school education level. By understanding a teacher's perceptions and what motivates his or her decision to implement blended learning, administrators and other decision-making personnel can design implementation protocols, which maximize positive teacher perceptions and blended learning pedagogy implementation. The outcome, meaning the end result being the teacher's decision to implement blended learning, can lead to his or her greater use of acquired educational technology and increased student learning achievements in the high school environment (Claro, Nussbaum, Lòpez, & Contardo, 2017).

In this chapter, I present the background, problem statement, and nature of the study. Each section offers relevant information to the context of the study and addresses the research questions. The chapter continues with the definitions, assumptions, and scope and delimitations as well as limitations of the study. The chapter concludes with a summary of the significance of the study and the potential influence of the findings on future blended learning endeavors in the high school educational setting.

Background of the Study

Blended learning technology integration by teachers is influenced by a number of factors and is not simply a matter of following the dictate of an administrator or supervisor (Archambault et al., 2016). A teacher's perceptions, which are based on the experiences of the individual, have a direct impact on his or her decision to implement classroom technology (Archambault et al., 2016; Nikolopoulou & Gialamas, 2016; Scherer, Siddiq, & Teo, 2015). Porter, Graham, Bodily, and Sandberg's (2016) qualitative study of higher education blended learning implementation found that blended learning pedagogy research indicated an improvement of student learning; however, when conducting interviews of 39 faculty, less than 50% had the perception that the research data supported blended learning pedagogy. Porter et al. (2016), also stated that scant information is available describing teacher perceptions and how these perceptions relate to blended learning classroom technology integration and how having a better understanding can inform decision makers on how best to implement blended learning technology initiatives.

In Baran's (2014) qualitative synthesis study of 329 articles, he stated that a teacher's perception of the usefulness of classroom technology was frequently incongruent with the intended use of the device or the way the technology was intended to be used. Baran stated that there was a lack of research as to the effect of teacher training on classroom technology and teacher perceptions. Scherer, Siddiq, and Teo (2015) conducted a quantitative study of 1,190 teachers: they argued that perceived usefulness is the predictor with the most strength of whether a teacher will implement classroom technology or not. Gough, DeJong, Grundmeyer, and Baron (2017) conducted a

quantitative study that included a survey of 42 teachers and found that flipped classrooms (a form of blended learning) were perceived by teachers as being beneficial due to the belief that more time would be available for student assistance because less time is needed for direct instruction and lesson preparation time.

A factor that plays a role in developing teacher perceptions of blended learning is professional development (Archambault et al., 2016). In a survey of 427 participants that involved 363 different teacher education programs, Archambault et al. (2016) found that only 4.1% of these programs offered field experience in online learning. Since blended learning requires an online learning component, Hsu (2017) in a quantitative study analysis of over 5,900 teacher surveys, argued that an internal factor of the teacher is confidence in utilizing technology. Hsu also stated that professional development opportunities to practice using technology greatly enhance perceived usefulness, and in turn the likelihood to implement the technology. Cochrane (2014) stated, in a qualitative study involving a secondary analysis of 35 research projects, a learning community that supports technology was a significant factor in a teacher's success in utilizing educational technology in the classroom.

The institution where the teacher is employed has an important role in aligning priorities toward educational goals and support mechanisms so that he or she perceives blended learning as useful and worth the time investment (Porter & Graham, 2016). Porter and Graham (2016) suggested further research utilizing qualitative interview methodology to gain insight in to the rationale of teachers in deciding on whether or not to implement blended learning pedagogy. Ekanayake and Wishart (2015) concluded in their qualitative

study of 18 secondary schools, that professional development had a positive impact on the teacher's perceived usefulness of technology in the classroom.

A challenge to blended learning use by teachers is the limited research in the K–12 environment (Drysdale, Graham, Spring, & Halverson, 2013; Oliver & Stallings, 2014). Oliver and Stallings (2014) argued that teacher preparation courses must include blended learning pedagogy, especially in the areas of instruction and technology hardware. In addition, implementation strategies and a variety of tools on incorporating blended learning pedagogy would, according to Oliver and Stallings, positively impact perceived usefulness of blended learning and therefore the likelihood of the decision to implement. A lack of understanding of a high school teacher's perceptions of blended learning and how those perceptions influence his or her decision to implement the pedagogy is repeated throughout the available literature. My study contributes to the identified gap by providing knowledge on how the teacher's decision to implement blended learning pedagogy is made and what factors, internal or external, have contributed to that decision.

Problem Statement

A lack of knowledge exists as to what extent a high school teacher's perception of blended learning influences his or her implementation decision (Edannur & Marie, 2017). This is important because knowledge of what influences a teacher's perceptions of blended learning can be used by administrators to provide professional development that will likely positively influence the decision to adopt the pedagogy. Teachers benefit by gaining an understanding of factors that affect perception and can ensure their decision to adopt blended learning pedagogy is based on sound teaching principles versus emotion.

Until recently, the primary use of blended learning had been at the college level, where students were able to access data that were otherwise impractical because of distance to the learning institution, physical limitations of the individual (e.g. mobility), or where funding and facilities were lacking (Archambault et al., 2016). High schools in the United States have seen growth in blended learning usage for the same reasons outlined above for college level students in addition to serving students who are classified as home schooled (Oliver & Stallings, 2014). Blended learning implementation has far outpaced the research and development of rules, guidelines, and legislation for this emerging pedagogy (Drysdale et al., 2013).

Archambault et al. (2016) stated that teachers' prejudices existed that limits their willingness to add this pedagogy to their methods. This is reinforced by Qasem and Viswanathappa (2016), who stated that teachers pre-evaluate the usefulness of a pedagogy based on their experience with similar types of learning platforms, regardless of the research information presented to support the new pedagogy. Ertmer (2015) argued that a teacher's experience with electronic classroom technology is the basis for his or her willingness to implement changes to classroom pedagogy that involves electronic technology. Zehra and Bilwani (2016) pointed out that electronic classroom technology integration skill level can be a factor that influences the perception of a teacher as to the ease of use of new technology, and that providing opportunities to increase those skills can lead to an increase in classroom electronic technology integration. According to Oliver and Stallings (2014), it is important to provide data and training to educators so they are willing to embrace the use of online curriculum in a blended learning classroom.

Twembeke and Goeman (2018) stated that the knowledge and skill of a teacher has a direct influence on his or her perception, and thus decision, to implement classroom electronic technology. They argued that the more comfortable the teacher is with new technology, including relating to the usefulness of the technology and the ease of use of pedagogy integration, the more likely successful implementation will occur. Professional development for teachers is important for building teacher knowledge of blended learning technology, can be extremely effective in having a positive influence on teacher perception, and has a positive effect on blended learning pedagogy implementation (Hennessy, Haßler, & Hofmann, 2015).

According to Cheok, Wong, Ayub, and Mahmud (2017), material support was a critical factor for teachers when classroom technology integration was being proposed. There are aspects of institutional support that can affect the perceptions of teachers toward classroom electronic technology integration. Besides the aforementioned material support, there is the availability of IT personnel and Internet access concerns that can influence a teacher's perceptions (Tondeur et al., 2017). According to Edannur and Marie (2017), by gathering the potential institutional related factors that can influence a teacher's perceptions of classroom technology, stakeholders can make informed decisions on how to best build the supporting IT infrastructure and also inform teachers of the support in place that improves their perceptions of the support that is available.

In addition to internal barriers of the teacher and potential perceived support barriers, external perceived barriers (i.e., social norms and administrator policies) could influence teacher perceptions, (Al-Hunaiyyan et al., 2018; Vongkulluksn, Xie, &

Bowman, 2018). Vongkulluksn, Xie, and Bowman (2018), stated a teacher's perception of student expectations and buy-in could limit the teacher's implementation willingness. They also stated that vague, unclear, and conflicting administrative policies often create apprehension of teachers toward implementing classroom technology initiatives. Greene and Hale (2017) stated that there was no information available that would inform administrators on the best practices of how to educate teachers so that these external barriers influencing negative perceptions toward classroom technology can be minimized.

Blended learning has shown the potential to enhance learning across curriculum disciplines and in a variety of academic situations, e.g., multiple levels of academic ability classrooms, special education settings, etc. (Archambault et al., 2016; Oliver & Stallings, 2014; Porter & Graham, 2016). De los Arcos, Farrow, Pitt, Weller, and McAndrew (2016) found that teachers who utilized blended learning pedagogy in their classrooms perceived student engagement as the greatest benefit. Qasem and Viswanathappa (2016) argued a lack of understanding as to the extent preconceived notions influence his or her decision to accept blended learning pedagogy prevents a teacher from making informed decisions on blended learning implementation. This in turn can lead teachers to not choose blended learning pedagogy in a setting when that choice will likely improve student learning (Archambault et al., 2016; Oliver & Stallings, 2014; Porter & Graham, 2016). Through interviews with teachers that have experience with blended learning pedagogy, this study adds to the understanding of teacher pedagogical decision making by providing insight as to the influencers of a teacher's perception of blended learning.

Purpose of the Study

The purpose of this phenomenological study was to explore the perceptions of high school teachers regarding their decision to implement blended learning pedagogy in their classroom. I sought to provide a deeper understanding of high school blended learning factors that influence a teacher's decision to implement blended learning in his or her classroom. The knowledge gained will provide administrators with tools to better choose professional development resources that will positively influence teacher perception thereby ensuring classroom implementation of acquired blended learning curriculum. Teachers will gain knowledge of factors effecting their perceptions and be able to differentiate between emotional and fact-based decisions regarding blended learning pedagogy.

Research Questions

Research Question (RQ) 1: How does the perception of a high school teacher regarding the usefulness of technology affect his or her decision to implement blended learning pedagogy?

RQ 2: How does the perception of a high school teacher regarding the ease of use of technology affect his or her decision to implement blended learning pedagogy?

Conceptual Framework

The conceptual framework that I used for this study was the technology acceptance model of Davis (1985). Based in part on Bandura's (1977) social cognitive theory, Davis argued that perceived usefulness and perceived ease of use were the two compelling factors in determining whether a person would choose to utilize technology. Davis

concluded that regardless of the design features of the system involved, it was the attitude of the person who was to use the system that was the ultimate determinate.

Utilizing the technology acceptance model, according to Davis (1985), there were three factors that related to a person's decision, or behavioral response to use technology: design features, cognitive response, and affective response. Davis contended that the affective response, or the person's attitude toward technology use, was determined by his or her cognitive response which was a summation of two beliefs held by the person: perceived usefulness and perceived ease of use. These two beliefs form the basis of the technology acceptance model and, according to Davis, are the key to understanding a person's behavioral response because it is through a person's cognitive response that he or she will form his or her affective response, which then becomes the behavioral response.

Davis, Bagozzi, and Warshaw (1989) expanded and clarified the meaning of perceived usefulness and perceived ease of use concerning the technology acceptance model by stating that these two constructs are of particular importance when it comes to determining the causes of a person to accept or reject technology. The conclusion, according to Davis et al. (1989), is that implementation can be a well thought out endeavor; however, it is perception of improved performance, or perceived usefulness, that will be a significant factor in determining the likelihood of a person choosing to utilize the technology.

Applying the theoretical concepts outlined above to the perceived usefulness of blended learning allowed me to conduct semistructured interviews of high school teachers to determine factors that may affect their decision to implement blended learning in their

pedagogy. I developed the research questions based on a review of the literature to elicit relevant information on how perceptions of a high school teacher's usefulness of technology influence his or her technology implementation. Answering these questions contributed to filling the gap of knowledge by addressing blended learning pedagogy adoption at the high school level and how teacher perceptions are formed by internal and external factors.

Cheok et al. (2017) utilized Davis' technology acceptance model in their qualitative study of 60 K–12 teachers. Cheok et al. concluded that for classroom technology integration to be successful, the teacher's perception of its usefulness and ease of use must be improved through training and support. Administrators ensuring that professional development opportunities are available and the information technology support is in place are crucial to a positive and beneficial teacher perception of classroom technology (Cheok, Wong, Ayub, & Mahmud, 2017). In Chapter 2, I provide a more detailed and thorough explanation of the framework and the connection to the current study.

Nature of the Study

I chose a phenomenological qualitative interview study for this research to find information that transcends the varied settings of the participants. When I conducted the interviews, I determined the themes' applicability based on facts presented by the data through a phenomenological lens. To gain an in-depth understanding, I conducted interviews and then coded the transcripts of the responses through a phenomenological approach. This qualitative approach through a phenomenological lens was well suited to

my goal of understanding the teacher's thought processes in context with the research questions (see Eddles-Hirsch, 2015). The phenomenon specifically studied was how perceived usefulness and perceived ease of use affected a teacher's perception of blended learning technology, and in turn, his or her decision to implement the pedagogy in his or her classroom.

Several locations utilize blended learning curriculum in the classroom at the high school level. I chose my research sites by the relevance to the study's purpose of teachers who had blended learning curriculum as an option at their school sites. Sample size for this study was driven by the need to have saturation of data. I anticipated needing approximately10 interviews within the population because the participants would have a variety of demographics, e.g., school site and subject taught, to provide breadth of scope and yet comparable classroom setting parameters to fall within the paradigm of the research questions. According to Mason (2010) small sample sizes are capable of obtaining saturation and it is up to the researcher to ensure that the sample size is adjusted as needed to satisfy the saturation requirement.

The other most common approaches to qualitative research are: ethnography, narrative, grounded theory, and case study. According to LeCompte and Schensul (2010), ethnography is the emersion of the researcher in the environment of the participants. This approach was not appropriate for this study because I did not work in the locations I received information from, and factors that may or may not influence the perceptions of the participant teachers was not equivalent to my perceptions as an educator from a different working environment. Lewis (2015) described narrative inquiry as a combination

of events over time that is the collective stories of the participants, which are then explained in an overarching theme. Since the theme of the study was already established, this approach was contradictory to the purpose. Theory development or reinforcement was not a goal of this study, therefore grounded theory does not fit because it utilizes interviews and documents to confirm or develop the underlying theory explaining an event or series of events (Lewis, 2015). According to Lewis, case study is singular or multiple events or data sources providing a deep understanding of a cultural phenomenon in which the researcher is primarily interested in demonstrating the effectiveness of a particular program, which this study was not designed to do. Lewis stated that phenomenology includes interviews and other information gathered through observation and from documentation to form an understanding of a phenomenon. I chose the phenomenological approach for the current study because it best allowed for the insight into the motivations of an individual based on his or her perspective of the phenomenon examined.

Quantitative research data could provide statistical analysis of the numbers involved, but not the reasoning behind the numbers. Creswell (2012) stated that when the desired result of research is to gain a deeper understanding of a phenomenon, then the researcher should lean toward a qualitative approach. My reasoning for not utilizing a quantitative research approach supports excluding a mixed methods approach as well since it includes a quantitative research component.

Definitions

Blended learning: Any instruction where the student is in a school location with supervision and receiving all or part of his or her curriculum through an online resource (Brown, 2016; Oliver & Stallings, 2014).

Educational technology: Any electronic device used in an educational setting. (Ertmer, 2015).

Technology integration: Technology for instructional preparation, instructional delivery, and as a learning tool. (Liu et al., 2017).

Assumptions

I assumed that the interviewees answered the questions honestly and that there was no pressure to participate in any way. I also assumed that the perceptions to be described by the participants on blended learning integration was coherent and logical with enough specificity to provide clarity, but also broadly applicable to multiple high school classroom settings.

Scope and Delimitations

The study was bounded by the educators who were familiar with blended learning, had permission to participate in the study from their administrators, and were available for interviewing. After receiving permission to interview teachers from an administrator, I contacted teachers and asked them to participate in the study. I invited teachers with experience using blended learning to participate in the study. The results of this study can transfer to other schools at the high school level and provide information for further research into teacher perceptions of blended learning. The intent of this qualitative study

was to identify perceptions of high school teachers regarding their intentions to implement blended learning pedagogy. It was not my intention in this study to offer solutions to blended learning implementation barriers, but to provide insight into the possible influences of teacher perceptions that effect implementation.

Limitations

Possible problems with a study or weaknesses that may be present are known as limitations (Creswell, 2009). This study is framed at the high school education level and took place in a high school setting. The teachers represented multiple grade levels and multiple disciplines. The relatively small sample size limited my ability to determine if I achieved theme saturation. Since only a few schools were represented, transferability to other schools may be limited, especially in other geographic locations with dissimilar demographics.

Significance

This study contributes partially to filling the identified gap by providing information about how high school teachers' perceptions of blended learning can affect the decision to implement the pedagogy. By identifying the influences of perceptions on pedagogy use, teachers can use this information to inform their decisions on approaches to positively impact the perceptions, thereby increasing the likelihood of their decision to implement blended learning. Other studies (Drysdale, Graham, Spring, & Halverson, 2013; Scherer et al., 2015) explored the perceptions of teachers toward blended learning at the college level; this study however provides information at the high school level of instruction.

This study advances the profession by providing knowledge of influences on teacher perceptions of blended learning and how those influences can affect his or her decisions to implement the pedagogy. According to Porter et al. (2016) blended learning pedagogy was shown to be an improved method toward student learning. Those moving to advance the technology can use this information to ensure classroom implementation success by emphasizing the usefulness of blended learning in student achievement gains. Scherer et al. (2015) argued that a teacher's perception of technology usefulness is *the* best indication of his or her intention to use technology in the classroom for instruction.

The benefactors of this study are all education stakeholders through improved classroom pedagogy and decreased waste of time and resources in procuring curriculum that sits idle because of a teacher's negative perception of its usefulness. For administrators, time used researching and procuring the curriculum and the money spent is not seen as wasted or mismanaged; for teachers, reasons for positive and negative perceptions are identified giving them insight as to how they may be making their own decisions about blended learning; and for students, an increased likelihood that their teachers will choose to implement blended learning pedagogy and in turn increase learning.

Summary

This chapter included the background explaining classroom technology and how teacher perceptions influence decision-making, a problem statement describing a gap in research on high school blended learning, the purpose of the study including how understanding a teacher's decisions toward blended learning implementation can aid in

adopting classroom technology initiatives that improve student learning, and the research questions. I presented an explanation of the conceptual framework and the nature of the study with the appropriate disclosure of limitations and assumptions. Finally, I addressed the significance of the study concerning filling a gap in research and advancing the profession. Chapter 2 includes a review of the current literature on teacher perceptions and blended learning and how previous research informs the current study.

Chapter 2: Literature Review

Classroom pedagogy is a dynamic topic with ever changing protocols that can be difficult to keep up with. The purpose of this phenomenological study was to explore the perceptions of high school teachers regarding their decision to implement blended learning pedagogy in their classroom. This is important because knowledge of what influences a teacher's perceptions of blended learning is useful by administrators to provide professional development that will positively influence the decision to adopt the pedagogy. The literature review in this chapter shows that there is a lack of research at the high school level regarding how best to present emerging technology to teachers and explain to them what benefits can be achieved by utilizing approaches like blended learning.

Blended learning is any instruction where the student is in a school location with supervision and receiving all or part of his or her curriculum through an online resource (Brown, 2016; Oliver & Stallings, 2014). Blended learning is a combination between face-to-face and online instruction. Blended learning provides students access to course information that is typically more current and relevant to their learning needs as the online information can be updated immediately with changes in data (Kihoza, Kalegele, Zlotnikova, & Kizito Bada, 2016).

In the past, the primary use of blended learning had been at the college level, where students were able to access data that were otherwise impractical because of distance to the learning institution, physical limitations of the individual, or where funding and facilities were lacking (Archambault et al., 2016). Greene and Hale (2017) reported

that an estimated 9,000,000 K–12 students in the United States have participated in some form of blended learning and approximately 75 schools are operating with fully blended learning classes. Most public, private, and charter high schools in California have seen growth in blended learning usage for similar reasons as colleges, in addition to serving students who are classified as home schooled (Oliver & Stallings, 2014). Kellerer et al. (2014) stated that blended learning at the K–12 level is an area in education that is growing rapidly. Because of the quick growth, blended learning implementation has outpaced the research of factors that effect faculty implementation for this emerging pedagogy (Porter, Graham, Bodily, & Sandberg, 2016). According to Brown (2016), less than 5% of research into blended learning relates to the teacher's pedagogy. Brown argued that increasing understanding of a teacher's decision to incorporate blended learning into his or her pedagogy would benefit the areas of teacher training and student learning. Archambault et al. (2016) stated that teachers' prejudices might exist that limits their willingness to add blended learning pedagogy to their methods. With a lack of understanding as to the extent that the teachers' preconceived notions influence their decision to accept blended learning pedagogy, school administrative personnel lack the tools they need to make informed decisions on blended learning implementation (Twembeke & Goeman, 2018). The purpose of this phenomenological study was to explore the perceptions of high school teachers regarding their decision to implement blended learning pedagogy in their classroom and the factors that influence teacher decisions to implement blended learning in their classrooms.

Literature Search Strategy

I conducted a search of the academic databases at the Walden University's Library to identify resources on the topic of technology integration in high school schools from 2014–2019. Specifically, those databases included ProQuest, ScienceDirect, ERIC, Education Research Complete, SAGE, and the Dissertations and Theses Database. Boolean searches also uncovered pertinent studies in Google Scholar.

The initial searches used two search terms: *blended learning* and *teacher perceptions*, which returned over 3000 studies. I added terms to limit the results, namely *high school* and *attitudes*. Further limiting the search to those studies published in the last four years returned results to less than 100 per database. Substituting *pedagogical* for *attitudes* in the search string resulted in alternative articles that I reviewed for relevance and inclusion in the study.

Articles cited in this study were from peer-reviewed journals, which have established credibility within a field of experts. Reviewers have checked the research validity and reliability, as well as agreement with experts in the field. Whether a journal used a peer-review process is checked using the Walden Library's Verify Peer Review tool, which connected to Ulrich's Periodical Directory. This tool enabled evaluation of research studies by peer reviewers, whether the studies were quantitative, qualitative, or mixed methods. The quantitative research reviewed studies focused on measurable features while qualitative research reviewed studies focused on experiential facets. The key terms in searches included: *blended learning, teacher perceptions, K–12, attitudes, pedagogy, technology acceptance model,* and *high school*.

Conceptual Framework

The conceptual framework that informed this study was the technology acceptance model of Davis (1985). Based in part on Bandura's (1977) social cognitive theory, which states that an individual either does or does not do an activity based on the perception of success, Davis argued that perceived usefulness and perceived ease of use were the two compelling factors in determining whether or not a person would choose to utilize technology. Davis concluded that regardless of the design features of the system involved, it was the attitude of the person who was to use the system that was the ultimate determinate.

Bandura's Social Cognitive Theory

The hypothesis of Bandura's social cognitive theory is that a person's self-efficacy will determine if he or she will try a task (initiate), how hard will he or she try to accomplish the task (effort), and to what extent will he or she continue to try and accomplish the task in the face of obstacles (perseverance; Bandura, 1977). He defined an efficacy expectation as a conviction a person has that he or she *can* be successful with behavior that will produce the desired results as opposed to outcome expectancy where the person guesses that his or her behavior will accomplish the task. Bandura (1977) found that there is a relationship between the degree of self-efficacy and behavioral change and that the two themes underlying the relationship were the perceived usefulness and the perceived ease of use of the individual.

Davis' Technology Acceptance Model

Utilizing the technology acceptance model, I give clarity to the two research questions and form the basis of understanding to the research data gathered for this study. According to Davis (1985), there were three factors that related to a person's decision, or behavioral response, to use technology: design features, cognitive response, and affective response. He determined that design features were part of an external set of variables that do not directly affect a person's behavior pattern or attitude. Davis contended that the affective response, or the person's attitude toward technology use, was determined by his or her cognitive response which was a summation of two beliefs held by the person: perceived usefulness and perceived ease of use. These two beliefs form the basis of the technology acceptance model and, according to Davis, are the key to understanding a person's behavioral response because it is through a person's cognitive response that he or she will form his or her affective response, which then becomes the behavioral response.

Davis et al. (1989) argued that determining the causes of a person to accept or reject technology are of particular importance and the technology acceptance model with the constructs of perceived usefulness and ease of use expands and clarifies their meaning. Davis et al. stated that a significant relationship ($r = .61$) exists between what the self-predicted reporting of intended use was compared to the perceived effect that the utilization of the new system would improve job performance. Davis et al. stated that the correlation of intended use and perceived effect was still more significant ($r = .79$). The conclusion, according to Davis et al., was that implementation can be a well thought out endeavor, however it is perception of improved performance, or perceived usefulness, that

will be a significant factor in determining the likelihood of a person choosing to utilize the technology.

Bandura's self-efficacy theory, according to Davis et al. (1989), supports the construct of perceived ease of use by explaining that the way a person judges his or her ability to perform relative to the situation at hand will in turn guide behavior. Davis et al. argued that there is a cost-benefit relationship, relating to the time and effort involved implementing the technology compared to the time saving or reward outcome. They stated that a subjective study of the cost-benefit aspect of ease of use would be beneficial in that the reasons for the choices made could be explored and the differences between the intervention strategies employed by a more objective approach identified.

Enhancing job performance, rewarding, increased positive image, increased efficiency, and cost versus benefit analysis all contribute and are factors in perceived usefulness and perceived ease of use (Davis et al., 1989). According to Davis et al. (1989), perception forms attitude, and attitude drives behavior. Brown (2016) stated that it is the perceived limitations of the technology in a physical sense, what the technology is designed to do and how it can be incorporated into the pedagogy, that becomes the teacher's decision of its usefulness or ease of use. Understanding the cognitive responses that make up the perceptions of a teacher and what affects their attitude toward implementing the technology needed for blended learning, can help administrators to make the decisions needed to influence the outcomes to those that are desired.

Cheok et al. (2017) explained that the technology acceptance model as developed by Davis et al. (1989) is a theory by which to explain or predict whether a technology

user, based on his or her perceptions of the value of system concerning its capabilities, is likely to utilize the system. Cheok et al. stated that teachers are self-determining when it comes to the technology they choose to include in their pedagogy, regardless of the intent of administration, because of the autonomy innate to their classroom environments. They argued that since it is the teacher's perception that drives the outcome, the perceived ease of use of the system is a direct predictor of perceived usefulness, and in turn becomes the decision point for inclusion in classroom instruction by the teacher.

In addition to the Davis et al. (1989) technology acceptance model, Koehler and Mishra's (2005) technology, pedagogical, and content knowledge (TPACK) theory addressed the unique challenges of technology integration into classroom curriculum. By providing a means in which to measure a teacher's knowledge and skills to integrate content, good teaching practices, and technology for effective learning, this framework contributed to this study's purpose of understanding the decision making processes involved with incorporating technology in the classroom (Koehler, Mishra, Kereluik, Shin, & Graham, 2014). Guerra, Moreira, and Vieira (2017) stated that TPACK is a means to represent what knowledge on a professional level a teacher possesses toward classroom technology.

Willermark (2018) pointed out that TPACK is a common framework in both research studies and over 600 studies of school system structure. In a review of 107 peer-reviewed journal articles on TPACK, Willermark argued that the usefulness of the TPACK framework is the recognition that in order for technology to be properly integrated, the teacher's pedagogy and content knowledge must be considered. Turgut

(2017) used TPACK as a theoretical framework to study technology integration in English teachers in-service training that involved information and communication technology (ICT) and found that there was a disparity between what expectations of utilizing technology were compared to actually using technology, in that the expectation was high, but the actual use was low.

The first research question for this study concerned the teacher's perceived usefulness of technology and the impact this had on his or her decision to implement blended learning pedagogy. Scherer, Siddiq, and Teo (2015), in their technology acceptance quantitative study of 1190 teachers in 132 schools, found that perceived usefulness of technology in the areas of creating interest and learning, collaboration and communication, and problems and obstacles as not being significantly different from each other from the teacher perspectives of self-efficacy and technology use in school. They did find significance, however, when comparing the three categories of usefulness to the age of the teacher where the older the teacher, the less useful technology was perceived. Gough, DeJong, Grundmeyer, and Baron (2017), in their quantitative study of 44 high school and middle school teachers' perceptions of classroom technology use as an information delivery system, discovered that there was a significant perceived benefit toward instruction. The areas included active learning, student to teacher interaction, time for learning, and personalized learning. They found several areas where the difference was not significant relating to student considerations, which included classroom discipline, student preference, and student responsibility.

In a global survey of 657 K–12 teachers' perceptions of open educational resources in a blended context, De los Arcos et al. (2016) found that nearly 70% of the teachers agreed or strongly agreed that technology increased the teaching methods available. De los Arcos et al. (2016) also found that a teacher's perceived usefulness of technology was significant toward student achievement in the combined areas of independence and self-reliance with 71.7% of respondents strongly agreeing or agreeing. Al-Hunaiyyan, Alhajri, and Al-Sharhan (2018) confirmed in their study of 132 instructors that major contributing factors to the perceived usefulness of classroom technology was the amount of support the instructors received and the time dedicated to professional development toward the technology being implemented. They pointed out the significance of the effect of support and professional development on the perceptions of classroom technology usefulness by the teacher with data that showed that 76% thought that classroom technology would help the students learn but only 49% would be satisfied with its implementation. Gil-Flores, Rodriguez-Santero, and Torres-Gordillo (2017) found in their quantitative study of 3339 teachers from 192 schools that lack of classroom technology training reduced the likelihood of teacher technology use by 39% and that teacher collaboration increased the likelihood of technology use by a factor of 18% per unit of increase. Al-Hunaiyyan et al. (2018) and Gil-Flores et al. (2017) confirmed the significance of professional development and teacher support on the perceptions of the usefulness of classroom technology as well as significance in the impact these have on self-efficacy.

The second research question concerned the teacher's perceived ease of use of technology and the impact this had on his or her decision to implement blended learning pedagogy. Stödberg and Håkansson Lindqvist (2017) in their qualitative study of 470 K–12 teachers from 49 schools reported that ease of use was a major contributing factor in teachers deciding to implement classroom technology. They stated that teachers reported either having a lack of knowledge required to fully implement the technology or that the technology was not as robust as previous versions, therefore dissatisfying. In either case, the teachers' perceptions influenced their decision to not implement classroom technology. In their mixed methods study of teachers and learners from three high schools utilizing the Unified Theory of Acceptance and Use of Technology (UTAUT) framework, Osakwe, Dlodlo, and Jere (2017) stated that the perceived effort required of a teacher to learn and use new technology is the main driver in their decision to implement the technology. Their study found that 83.3% of teachers perceive that classroom technology integration in the form of a mobile device would not require a lot of effort and the teachers would not be resistant to changing their pedagogy to include the devices.

A common term often associated with the decision to implement classroom technology pedagogy and the perception of the teacher is *barrier* (Nikolopoulou & Gialamas, 2016; Vongkulluksn, Xie, & Bowman, 2018; Zehra & Bilwani, 2016). Nikolopoulou and Gialamas (2016) argued that identifying what a teacher defines as a barrier to classroom technology integration is significant because these "barriers" potentially result in technology being excluded in classroom pedagogy. Their study of 119 high school teachers revealed that the perceived barriers to classroom technology external

of the teacher were lack of support in ways to integrate technology (77.5%), lack of time to practice using the technology (71.3%), and lack of time for in-service training opportunities (70.8%). They also reported that perceived barriers involving the teacher's beliefs were fear of using technology (84.6%), lack of confidence with technology (76%), and the teacher's negative attitudes toward technology (76%). Kihoza, Kalegele, Zlotnikova, and Kizito Bada (2016) stated that internal barriers like lack of technology skills or experience using technology and external factors like lack of funding and unreliable Internet connections manifested in a resistance to change in classroom pedagogy toward a technology driven curriculum. The common thread is not whether the choice had been made by administration to use classroom technology or if the technology equipment is in place, but rather on the perception of the teacher as to the ease of use in implementing classroom technology based on his or her training and experience with the technology (Comi et al., 2017).

The purpose of a conceptual framework is to answer the research questions by explaining the relevance of the research proposal and how the design of the study will significantly support the answers by adding to the knowledge base already present (Ravitch & Carl, 2015). Like a puzzle with its pieces scattered, it is not until they are put together that the complete picture emerges. Often, the outer edge of the puzzle is completed first, or the "frame," and once in place the rest of the puzzle can come in to view, built on the framing done at the beginning. The framing of this study is Davis' (1985) technology acceptance model, which was influenced by Bandura's (1977) social cognitive theory.

Methodology

The methodological approach of this study was phenomenology. Moustakas (1994) stated that a phenomenon could best be understood by examining an individual's perspective of his or her experience through descriptive dialogue, then identifying the key characteristics or themes that emerge. Sokolowski (2000) stated that the roots of phenomenology go back to its founder, Edmund Husserl, when in 1900 and 1901 he published his two-part book *The Crisis of European Sciences and Transcendental Phenomenology: An Introduction to Phenomenology*. The definition that Sokolowski stated is that "phenomenology is the study of human experience and of the ways things present themselves to us in and through such experience" (p. 2). Eddles-Hirsch (2015) stated that a phenomenological approach is used when the researcher is focused on an individual participant's perspective of a phenomenon rather than the detailed analysis of the experience. It is with this last description that I framed this study in phenomenology; to gain an understanding of the teacher's thought process as he or she contemplated using blended learning in his or her classroom.

Furthermore, Eddles-Hirsch (2015) discussed three themes within phenomenological research: transcendental, hermeneutic, and existential. For this study, I used transcendental. Eddles-Hirsch argued that the transcendental approach in phenomenological research is appropriate when the intent of the study is to understand what Hurssel called the noesis, or subjective experience of the research participant compared to the noema, or objective description of the setting. According to Eddles-Hirsch the transcendental phenomenological approach is ideal for identifying and

reporting on the key components of a phenomenon, especially in an educational setting, because the setting and presentation will be the same but the individual reporting of the experience is different and therefore presents identifying perceptions of the phenomenon. Twembeke and Goeman (2018) used a phenomenology framework to examine why adult education teachers would, or would not, chose to employ a flipped classroom model or a blended learning classroom where the students gain their initial information of a topic electronically, away from the classroom. Their study focused on the lived experiences of the teachers in an effort to understand the intrinsic motivations behind their decision to implement the flipped classroom pedagogy.

Literature Review

A review of the literature revealed that personal and professional experiences of the teacher have the greatest influence on his or her perception, and ultimately implementation, of blended learning (Gil-Flores et al., 2017). According to Comi, Argentin, Gui, Origo, and Pagani (2017), an example of the experience influencing the teacher is previous experience with learning technology and the extent to which the teacher's professional development prepared him or her for technology use in the classroom. Comi et al. stated that other challenges many teachers face that influence their decision is the availability of support from administrators, IT department, or fellow educators. Edannur and Marie (2017) and Kellerer et al. (2014) stated that there are many known barriers to integrating technology including economical, time availability, and training levels. Edannur and Marie argued that it is teacher perceptions of technology that

is the most critical factor to consider when technology implementation issues are being discussed.

Four themes emerged from the literature review. They were: the attitude of the teacher toward technology integration, teacher training opportunities including in-service and peer tutoring, technology support in the form of software and hardware installation and maintenance, and cultural paradigms from all stakeholders within the community. Stödberg and Håkansson Lindqvist (2017) stated that these four influences are among the key elements to consider when the teacher's perspective toward classroom technology integration is taken into account. The four specific areas of this literature review are: teacher perceptions, professional development, institutional support, and implementation challenges.

Teacher Perceptions

Teacher perceptions include, but are not limited to, personal beliefs and attitudes that are based on individual experiences. Qasem and Viswanathappa (2016) and Scherer et al. (2015) stated that a teacher's perception of the usefulness of the technology directly related to the intentionality of his or her use, i.e., the more a teacher recognizes technology as useful the more likely he or she is to integrate it into his or her pedagogy. Teacher perceptions of technology influence implementation (Archambault et al., 2016; González-Sanmamed, Sangrà, & Muñoz-Carril, 2017; Gough, DeJong, Grundmeyer, & Baron, 2017; Porter, Graham et al., 2016). Edannur and Marie (2017) concluded that when adding blending technology in a traditional face-to-face classroom, having an understanding of

the teacher perception is crucial to the success of the integration of the two pedagogical methods.

In their quasi-experimental study of 60 teachers, Qasem and Viswanathappa (2016), stated that teachers form their perceptions of technology by pre-evaluating the outcome and deciding whether or not to implement. Tondeur, van Braak, Ertmer, and Ottenbreit-Leftwich (2017) conducted a meta-aggregation review of 14 qualitative studies and concluded that a teacher's perception is a function of his or her experience with technology and his or her pedagogical outlook on learning and whether it should be teacher or student based. Ertmer (2015) stated that a teacher's value of technology will form his or her beliefs or perceptions of technology and it is this belief system that impacts his or her willingness to implement technology. Ertmer argued that if a teacher has more of a traditional point of view where learning is teacher-centered, than his or her pedagogy is likely to avoid technology and if he or she has a constructivist view, where the learning is student-centered, than his or her pedagogy is more likely to include technology.

Archambault et al. (2016) explored reasons that contribute to K–12 teachers' decisions to include or not to include Web 2.0 technologies. They conducted a qualitative study that used a survey questionnaire that asked for demographics, Web 2.0 technologies available, and participants' behavioral intention to use Web 2.0 technologies. The findings confirmed that Web 2.0 technologies are not typically used by the surveyed population, including many with zero percent use and that the main factors influencing this decision are previously established classroom routines and the view of the teacher that student

behavior would be more difficult to control. In addition, Nikolopoulou and Gialamas (2016) identified three factors that are the perception barriers to teacher use of technology in the classroom: confidence, equipment, and support, or the lack of these. They argued that a teacher's perceived value of technology has a direct impact on his or her willingness to utilize it, either superficially or significantly. Investigating teacher perceptions in a high school setting, Nikolopoulou and Gialamas concluded the resistance to change and low levels of confidence were the leading cause of a teacher's perception that classroom technology integration was too difficult and therefore rejected.

In their qualitative study of 39 faculty members, Porter et al. (2016) stated that not much is available regarding the factors that determine whether or not teachers will implement blended learning pedagogy. The areas of study that Porter et al. recommended that can influence a teacher's decision to implement blended learning were quality of student-teacher dialogue, the amount of time commitment involved with preparing lessons that are provided online, and the challenges involved with interacting with a student while they are online versus if they were physically located in the classroom. Knowing how each of these areas can affect the psyche of the teacher can give teachers and their supervisors information on how to better support blended learning implementation and ensure success.

Vongkulluksn et al. (2018) conducted a hierarchical linear model and multilevel path modeling quantitative study that included 16 schools with 624 sixth to twelfth grade teachers and 20 administrators that revealed what a teacher believes about integrating educational technology and the associated attitudes have a direct impact on how he or she integrate the technology into his or her pedagogy. They concluded that having access to

educational technology in the classroom does not guarantee implementation; many factors come in to play. For example, the perceived usefulness of the technology in question, or what the researchers termed as the value of the technology to the teacher, was a significant factor to the decision to implement its use. Vongkulluksn et al. stated that barriers exist that interfere with a teacher's acceptance of a change to his or her current pedagogy, especially when it comes to technology. They argued that unless a barrier's threshold is crossed, that barrier would prevent a teacher from implementing the technology.

Zehra and Bilwani (2016) stated that a teacher's perception of their teaching method would be a significant factor in whether or not he or she implements classroom technology. They reported that technology integration processes are yet another skill that teachers must obtain to effectively implement classroom technology and that this can provide additional time requirements to already compacted schedules. Zehra and Bilwani argued that it is important to evaluate the level of use of classroom technology of teachers, compare that to their perceptions of classroom technology usefulness, and identify the challenges teachers have to filling the void between perception and implementation.

A particular area of focus for Vongkulluksn et al. (2018) was second-order, or internal barriers. These intrinsic barriers are those that are internal to each individual and can be more challenging to address, as each individual will have different underlying factors that affect the barrier makeup. Examples of these kinds of barriers include the knowledge and skills needed to operate and implement classroom technology and the attitudes and beliefs that teacher's have toward using technology as part of their pedagogy. Vongkulluksn et al. stated that the attitudes and beliefs, or perceptions of the teacher

toward technology have a direct relationship to his or her view of the usefulness of the technology toward reaching the learning goals of the students in his or her charge. They argued that when teachers have a positive outlook of the inclusion of educational technology to student achievement toward learning goals, the likelihood of pedagogy integration is significantly higher. Zehra and Bilwani (2016) confirmed this by stating that of the many factors that can influence technology integration, it is a teacher's perceived usefulness that is the determinant of implementation, combined with his or her perception of the impact the technology will have on student learning.

One teacher parameter that Vongkulluksn et al. (2018) found to be less influenced by a change in internal factors was teacher experience level. The more years of experience teachers had, the less confident they were in their ability levels and the lower their perception of the usefulness of classroom technology. They also found that a teacher's perceived technology ability did not have as much of a significant influence on classroom technology integration as his or her perception of the usefulness of the technology.

According to Scherer et al. (2015), the perceived usefulness of technology is the "strongest predictor of teachers' intention to use" (p. 202) technology in the classroom. Since perceived usefulness is a qualitative source of information unique to the individual being asked, a useful method of gaining this information is through the interview. By designing questions that explore the perceptions of the teacher toward blended learning, the answers can be analyzed and common reasons behind the creation of the perceptions can be found. In contrast, Kihoza et al. (2016) stated in their quantitative study of 235 participants that an internal barrier to classroom technology integration was the lack of

training the teacher had received on implementing technology. Kihoza et al. observed that if the teacher does not receive training on classroom technology use, either pre-service or in-service, than there was statistically significant chance he or she would not implement classroom technology pedagogy, even if it were provided to him or her. The research suggests that training support is crucial to classroom technology initiatives being successfully implemented (Kihoza et al., 2016).

Teachers typically have their own beliefs about blended learning and the accompanying incorporation of technology prior to its implementation and these beliefs impact the decision to incorporate new technology into the pedagogy (Brown, 2016). Brown (2016) stated in his review of 58 articles that there is a significant connection between teacher perceptions and the anxiety level toward blended learning implementation. He stated that teachers that perceive blended learning technology as challenging to implement were less likely to implement blended learning and had higher anxiety levels.

Gough et al. (2017) stated that little research has been completed on flipped learning (a form of blended learning) at the K–12 level and they focused on grade level instead of content area. Specifically, they wanted to know what teachers' perception on how effective a flipped classroom was concerning potential benefits, instructional considerations, learning, and student considerations. The grade levels identified were K–12, but the data were broken down between middle school and high school with no data collected from elementary teachers due to zero responses at that level. The key results from the quantitative study of 44 teachers were that teachers perceive an increase in

interactive time with students and the ability to construct a variety of active learning scenarios, because of the decreased time needed to lecture or provide direct instruction, as the strongest supporting factors of blended learning (Gough et al., 2017).

De los Arcos et al. (2016) conducted a study to understand the perceptions of K–12 teachers in regard to open source electronically delivered material as a resource for blended learning as well as face-to-face and online classes. They found that the blended learning teachers perceived students grades as improved less than 50% of the time. Even so, it was student engagement in learning and the student's involvement of the learning process that the teachers perceived as the greatest benefit. An area relating to student involvement and classroom technology was explored by Baran (2014), who conducted a review of research that sought to address trends and gaps relating specifically to mobile devices such as cell phones and tablets. The qualitative synthesis of data revealed there is a lack of theory and concepts for the use of mobile technology in the classroom, and that there is a large disparity of what is perceived as the way mobile devices are to be used and the attitudes of the teacher in regard to the device's use. One observation reported was teacher training on the use of these devices was the least researched area in the documents reviewed. According to Baran, the best classroom advantage provided by mobile or PC devices was the ability to extend the classroom to places outside of the geographic location of the student.

Cheok and Wong (2015) developed a "theoretical model of the determinants of e-learning" (p. 75) that relates to secondary teachers, grades 9–12, and their satisfaction in teaching. There were three potential areas of issues in the discussion; "user-related

characteristics, organizational-related [*sic*] characteristics, and the e-learning-system characteristics" (Cheok & Wong, 2015, p. 75). They stated that computers being part of the classroom in a way that is fully embraced by teachers is not possible without teachers fully accepting computers as having an integral role. The idea was that satisfaction has a role to play as to whether or not a teacher will use a particular electronic delivery system but also to the extent he or she is willing to learn more about the system. Edannur and Marie (2017) found that teachers seldom used available technology for teaching purposes. They argued that a teacher's unwillingness to incorporate technology in his or her teaching practice has a direct relationship to his or her perception of the usefulness of the technology.

Teacher perception of blended learning, especially the technology component, is the driving factor of whether meaningful implementation is carried out or the technology is relegated to an electronic worksheet, or worse, never used (Hsu, 2017). The factors that research has pointed to thus far that have the greatest influence on teacher perception of the benefits of technology are previous knowledge, perceived benefit, and perceived confidence (Brown, 2016; Cheok et al., 2017; Claro et al., 2017; Edannur & Marie, 2017). Each of these areas can and should be addressed as a component of a blended learning initiative. Edannur and Marie (2017) stated in their quasi-experiment quantitative study of 29 teachers, that teachers who are recognized as exemplary in their employment of educational technology have overcome the typical barriers by perceiving ways to overcome those barriers. The findings of Edannur and Marie give credence to the importance of the relationship between teacher perception of technology and the

implementation of technology. They concluded that teacher perceptions often are the result of insecurity or incongruent with past teaching practices of the teacher, however, teacher preparation and in-service training on technology, especially in blended learning, could alleviate these perceptions. In addition, Twembeke and Goeman (2018) stated that teachers who have training on classroom technology are in a preferred position to make an informed decision on accepting the change in pedagogy, maintaining a positive attitude toward the change now and in the future, as well as the likelihood of implementing the classroom technology as designed.

Professional Development

Professional development is training that is provided by the employer, either onsite or in a remote location, or that the employee attends on his or her own, and is directly related to his or her assigned duties. Technology or operational professional development training contributes to a teacher's attitude, or perception, and preparedness to accept and implement classroom technology (Archambault et al., 2016; González-Sanmamed et al., 2017; Hsu, 2017; Osakwe, Dlodlo, & Jere, 2017). Twembeke and Goeman (2018) argued that what a teacher knows and what skills set he or she has will impact directly on the success of his or her implementation of classroom technology. They continued by stating that if the teacher can relate to the new system, feels he or she has the knowledge he or she needs to conduct the lesson with the technology, and are made part of the decision-making process, he or she is likely to be supportive of the new technology integration protocol. Tondeur et al. (2017) argued that in order to provide effective professional development that positively influences a teacher's perception of classroom technology, it is necessary to

first have an understanding of the factors that make up the teacher's belief system. In the case of blended learning, Greene and Hale (2017) argued that it is not as simple as providing another opportunity to learn how to operate computer software; it is a paradigm shift on how classroom instruction is delivered.

Ekanayake and Wishart (2015) conducted a qualitative study to determine the effectiveness of professional development (PD) for 18 secondary high school teachers chosen from a pool of 200 teachers surveyed prior to implementation of mobile electronically delivered curriculum. In part, the findings showed that PD did have a positive impact on the teachers' attitude toward the use of mobile devices in the classroom. Teachers gaining knowledge and experience on how to adapt their classrooms and integrate their particular teaching styles prior to technology integration were described as key to a positive attitude in the pedagogy implementation process. One conclusion was that changing teachers' "beliefs, values, and attitudes" (Ekanayake & Wishart, 2015, p. 176) is a must when deciding to incorporate educational technology and developing the accompanying PD and that the most important aspect of PD development is understanding the level of inexperience and level of competence the teachers have with the technology being implemented.

Archambault et al. (2016) argued that all states and Washington D.C. offer online learning in some form but that a push to make changes to teacher education in support of this fact had largely been ignored. Conducting a survey that resulted in responses from 363 different institutions across the United States, Archambault et al. identified only 4.1% of respondents offer an online field experience component. This represented only a 2.8%

increase from a survey conducted six years prior. Archambault et al. argued that teacher preparation programs needed to do a better job of informing new teachers of the emergence of online teaching utilization so it is recognized by the new teachers that they will need online teaching experience as part of their teacher preparation curriculum. Nearly 60% of new teacher training faculty believed that online teaching field experiences should be part of their programs, but were not. Archambault et al. concluded that although teacher preparation programs have made strides at preparing teachers for the latest classroom technology, e.g., online learning, there is a significant gap in where they are and where they need to be.

Kellerer et al. (2014) interviewed eight teachers who utilize blended learning in K–12 classrooms and concluded that professional development was important and beneficial in the teachers' experience of blended learning implementation and what the teachers perceived as the quality of their implementation. They stated that barriers to technology could be internal to the individual including beliefs on the effectiveness of technology and the benefit it has toward learning or simply its value in general. They continued that internal barriers included the teacher's perceived ability to utilize the technology effectively or his or her desire to change his or her teaching methods to adapt to the new pedagogy. González-Sanmamed et al. (2017) argued that if a teacher's perception of technology is positive, then he or she are more likely to use it in a lesson and the best way to positively influence the perception is to provide professional development opportunities that strengthen his or her skill set for technology use.

Kellerer et al. (2014) added that external barriers included the time needed to learn the new technology and add it to his or her lessons, time for training, and whether support will be available both physically for the equipment and staff related for operational questions. The leading indicator on whether these internal or external barriers interfered with implementation was the presence of professional development, i.e., if present, blended learning implementation was more likely to be successful. All eight teachers in the study reported that professional development and institutional support were important to blended learning implementation success. In a review of literature that included 58 articles on online instruction, Brown (2016) found that professional development that focuses on teachers having a hands-on experience with online technology, especially if it is similar to what will be used in the classroom, significantly increases the reported intention of implementing blended learning technology of teachers.

Utilizing participatory action research, Cochrane (2014) evaluated 35 published research projects to identify trends in the use of mobile technology in learning and two factors important for success stood out: technical and pedagogical support and an environment that supports a "community of practice" (p. 77). Mirroring Cochrane's conclusion, Hsu (2017) argued that internal and external factors contributed to a teacher's decision to implement, or not implement, technology in the classroom. External factors included access to technology and professional development opportunities. Internal factors included attitudes and beliefs and the confidence of the teacher to utilize classroom technology in a constructive and beneficial manner. Hsu stated that teachers were more likely to use technology tools for self-study than they were to use them for classroom

pedagogy. In addition, teachers reported using technology in the classroom for display purposes instead of utilizing it for student learning. Hsu stated that one of the most important factors to increase a teacher's use of technology in the classroom is professional development and that the measure of effectiveness should not be at a workshop, but in the teacher's classroom. Hsu argued that it is teachers that make the use of technology in the classroom a reality.

Osakwe et al. (2017) stated that one the most significant factors affecting integration of technology is the perception of the teacher in regard to its usefulness. They observed that no study had been conducted that evaluates the readiness of a teacher to implement technology during the implementation process. Osakwe et al. stated that there is a link between the beliefs of the teacher and the attitude he or she harbor toward technology. Strongly associated with the perceptions of the teachers and their reluctance to implement technology is their level of expertise in the system being implemented. Osakwe et al. stated that teachers report a resistance to integrate technology because of the required time and effort to learn the new technology or a lack of technology literacy or teaching self-efficacy. In addition, Guerra et al. (2017) stated that the obstacles that are found include lack of technology equipment, teacher fear of technology, and a lack of courses available to teachers on the use of technology. Qasem and Viswanathappa (2016) concluded that it is a need for training in how to operate technology and integrate it into a blended learning classroom that effects the teachers' perceptions, which in turn causes the decision to not implement classroom technology. They stated that the more teachers are

experienced in technology use prior to proposed classroom technology initiatives, the more willing the teachers are to implement the new pedagogy.

Osakwe et al. (2017) argued that there could not be an improvement in the implementation of technology in the classroom with out an improvement in the attitude of teachers toward technology. They concluded that lack of training, ignorance of technology skills, time requirements, stubbornness, and timidity toward new technology are all factors that influence a teacher's perception, and in turn implementation, of classroom technology. Zehra and Bilwani (2016) stated that the best intending teachers might be ineffective at implementing classroom technology if they lack the training to properly implement the technology and do not utilize technology on a regular basis. Hennessy, Haßler, and Hofmann (2015) argued that a significant professional development program is required to have a robust classroom technology environment. Professional development can address all of these issues and improve a teacher's perception of the usefulness of classroom technology and the perceived effort necessary to incorporate the technology in his or her classroom pedagogy.

Institutional Support

What constitutes institutional support for blended learning, according to Porter and Graham (2016), is the consideration of three areas: support, structure, and strategy. Cochrane (2014) identified a move from a teacher delivering a lecture type of learning to a scenario where the students obtain their information through technology and work together to create the learning. There was a noted lack of explicit support to students and staff and a lack of understanding that the changed delivery requires a changed

environmental setting in the classroom. Cochrane's conclusion was that significant support, in both material and education, was needed to ensure teachers and students are successful when integrating technology in the classroom. Tondeur et al. (2017) mirrored these findings by stating that school policy statements, peer mentoring initiatives, and information technology infrastructure are institutional areas important to classroom technology integration. In contrast, Drysdale, Graham, Spring, and Halverson (2013) analyzed over 200 theses and dissertations on the subject of blended learning to provide an analysis of research trends in this area of teaching. The findings included a need to develop theoretical frameworks specific to blended learning environments because the current frameworks utilized for research were based on a traditional teaching approach of teacher-centered instruction and therefore did not adequately address the decisions needed to evaluate or advise on blended learning pedagogy. Drysdale et al. further concluded that research in the K–12 setting was lacking compared to the blended learning research at the college level and that adolescent learners have a different set of requirements for learning from adult learners. As a result, a different theoretical framework should be developed and applied. The data indicated that there was a desire to show the connection between blended learning and increased student learning, but there were not data on teachers implementing this type of instruction, i.e., perceptions, attitudes, willingness, satisfaction, etc.

Porter and Graham (2016) reported that greater than 28% of participants' decision to implement blended learning or not was dependent on the alignment of the institution's rationale for implementation and their own, and this represented the most significant

factor for or against implementation by the teacher. They suggested that future research include interviews asking what rationales guide teachers to implement or not implement. In particular, Porter and Graham suggested a qualitative study to identify what is lacking in motivation to implement and or one that identifies methods to elicit participants to try blended learning. Edannur and Marie (2017) stated that their study emphasized administrator support for blended learning technology integration, particularly in the areas of professional development and information technology equipment support.

Administrators can play a significant role in the formation and influence of a teacher's perception of the usefulness of classroom technology (Vongkulluksn et al., 2018). Brown (2016) stated that when administration is perceived by the teacher to be strong advocates for blended learning, the teacher is more likely to implement it in the classroom. In contrast, Brown argues, if administrative leadership is weak, little to no incentives are offered, or material support is lacking, teacher intentions to implement blended learning pedagogy falls. Vongkulluksn et al. (2018) stated that an administrator's effort to create an atmosphere where classroom technology is seen as beneficial would positively impact the teacher's perception of the value and usefulness of the technology, which in turn would increase the likelihood of implementation. They emphasized that material support for classroom technology is important, but it is the perceptions of the teacher toward the usefulness of the technology that has the highest impact, and that this needs to be the focus of administration efforts to ensure integration into classroom pedagogy occurs.

Claro et al. (2017) stated that it is administrators who are supportive in the process of integrating technology and can articulate the contribution the technology will make to learning that are significant to the success of a classroom technology initiative. They argue that it is the administrator's acumen in regard to classroom technology pedagogy that can manifest into a robust classroom technology program lead by teachers with a positive perception of their institution's policies and support. Their survey of 242 schools found a significant relationship exists between what teachers reported as their perception of the level of pedagogical support (23 of 38 or 60%) and what administrators perceive the level to be (48 of 53 or 90%). There was also a significant relationship between what teachers perceived was their level of technical support (10 of 38 or 26.5%) and what administrators perceived (29 of 53 or 54.3%). Claro et al. concluded that new classroom technology is best implemented by first creating an atmosphere that promotes positive perceptions both for the administrator and the teacher and the significance of administration leadership in the implementation of new initiatives. In addition, González-Sanmamed et al. (2017) stated that appealing to a teacher's desire to increase job performance or student learning is the most significant factor in reported classroom technology intention when both voluntary and involuntary scenarios are included.

Gil-Flores et al. (2017) utilized multilevel logistic regression models to gain an understanding of a low level information and communication technology (ICT) use in spite of there being an ample supply of materials provided to the teacher in the way of equipment and infrastructure. Leadership policy adoption had directed the incorporation of ICT use in the classroom, and yet a low usage rate was reported. Gil-Flores et al. stated

that the demographics that determined whether a teacher will use ICT was how much experience he or she had as a teacher, what grade level was he or she teaching, how old was he or she, and his or her gender. Gil-Flores et al. reported that the interest that a teacher had in technology represented a direct relational impact of 41% between a positive or negative feeling of self-efficacy. Gil-Flores et al. concluded that a teacher's attitude toward classroom ICT is the greatest contributing factor to whether ICT will or will not be implemented. Gil-Flores et al. reported that for every unit of teacher collaboration allotted the probability of classroom ICT use increased by 18% and teachers that needed training to a high or moderate degree decreased the probability of use by 39%.

Cheok et al. (2017) reported a number of institutionally related items that influence a negative teacher perception of educational technology and interfere with the decision to integrate technology. They stated that lack of technology support was reported as a key challenge to implementing classroom technology and the teacher perception was that they would implement the technology and then have difficulty in connecting to the Internet or losing equipment function due to maintenance issues. Cheok et al. stated that teachers reported typical class sizes in the 30–40 student per class range, which often exceeded the number of technology resources available but also made it difficult for teachers to monitor students close enough to keep them on task or provide assistance in a timely manner. Zehra and Bilwani (2016) characterized the value of material support by arguing that the presence of educational technology in the classroom does not equate to improved student learning, it is the implementation of the technology, which is largely controlled by the teacher. Brown (2016) stated that lack of familiarity with technology can interfere with a

teacher's willingness to implement it and that infrastructure that is perceived to be unreliable can affect the teacher's sense of ease of use, which will contribute to the decision to not implement as well.

Zehra and Bilwani (2016) argued that all stakeholders, from administration, to staff, to student caretakers needed to be participants in the decision-making process of classroom technology incorporation. Administrative personnel are typically the decision makers when it comes to purchasing classroom technology, but this does not assure that the technology will be utilized as envisioned. Support areas like information technology personnel, fit within the current pedagogy structure, and the strategies unique to each learning subject are equally important. When teachers perceive that any one of these three areas has not been addressed, the result can be a belief that the effort is too great and the classroom technology falls by the wayside. Vongkulluksn et al. (2018) summed it up by stating that teachers facilitate integrating classroom technology as it relates to support by first filtering it through their perception of how useful the technology will be and the perceived ease of use. Administrators have a significant role in influencing the teacher's perceptions by providing opportunities for learning and practical experience that can positively impact the perceived value.

Implementation Challenges

There can be a myriad of challenges to classroom technology implementation, many of which can affect the teacher's willingness or ability to add or change his or her curriculum. Other than the aforementioned institutional and technology support areas, according to Oliver and Stallings (2014), there are at least three other areas of

consideration: the content of the material, the students and their differing learning abilities/modalities, and the classroom settings. The challenges to implementation are far reaching and each can contribute to the decision to implement blended learning pedagogy (Drysdale et al., 2013; Oliver & Stallings, 2014; Stödberg & Håkansson Lindqvist, 2017).

Drysdale et al. (2013) concluded that a disconnect exists between what students experience and their expectations. The researchers suggested that the blended learning vision compared to the action of the staff was creating an environment that will stifle growth, and in turn, learning. Oliver and Stallings (2014) stated that research on the effectiveness of blended learning has been limited in the K–12 setting and that teacher preparation must include the areas of context, instruction, and technology to be effective. Blended learning includes any instruction where the student is in a school location with supervision and receiving a portion or his or her entire curriculum through an online resource. Although blended learning has been implemented in high school settings in California, including in one-fourth of all charter schools, research supporting it has not kept pace. In a peer-reviewed article search on the topic, the greatest number of articles found were by the key word phrase “blended learning” suggesting that the terms “distributed learning,” “flexible learning,” and “hybrid learning” are being replaced and that blended learning is becoming the term of choice (Oliver & Stallings, 2014, p. 60).

According to Oliver and Stallings (2014), whether or not blended learning is effective for all subject matters has been brought in to question, and there is not sufficient research to provide the answer. They found that a benefit of blended learning is the ability to support learners of varying learning modalities and provide them with delivery options

that match their preferences. Oliver and Stallings recommended that teacher preparation classes incorporate a variety of blended learning implementation strategies and considerations to give teachers the tools and understanding to address a variety of student learning modalities and to instill the confidence and positive attitude they need to choose to embrace the pedagogy involved. According to Stödberg and Håkansson Lindqvist (2017), multiple studies revealed that teachers need instruction on how to design a learning module utilizing the equipment in a blended learning environment where they often receive instruction only on how to use the equipment.

Comi et al. (2017) stated that having the equipment to support ICT is not enough to have it implemented in the classroom, the teacher's use of the equipment, level of expertise, and ICT belief system all play a role in ICT implementation. According to the Comi et al. quantitative study of 634 teachers, the key to ICT implementation by teachers is their being able to implement ICT via ability level and their willingness to implement. Comi et al. argued that teachers who had positive attitudes about ICT use in the classroom where shown to have a higher incidence of utilizing ICT, even if they had a lower level of technology support, including actual technology equipment, than those teachers that had a negative attitude but more access to ICT. Zehra and Bilwani (2016) stated that lack of technology equipment and inadequate administrative and technical support were the most prevalent external barriers to classroom technology integration. They argued that the more support a teacher receives, and more importantly the perception of support, the more effort that will be made on the part of the teacher to integrate classroom technology. In contrast, Ertmer (2015) stated that schools have focused on providing the computer equipment to

classrooms with extremely low student-to-computer ratios and supporting equipment across the United States. Ertmer stated that although it appears technology is present in the classrooms, integrating it as a learning tool has been elusive. She argued that this is likely due to so-called "second order" barriers like a teacher's lack of knowledge in the technology pedagogy or his or her perception that the technology lacks value in improving learning.

Vongkulluksn et al. (2018) stated that there is a connection between the internal perceptions of teachers and their classroom technology integration practices. They argued that a challenge to creating a positive perception of the technology integration is what the teacher perceives to be the reliability and usefulness of it as a learning tool. Vongkulluksn et al. also stated that teacher perception of access to a particular computer software program and its usefulness in the classroom may differ from the provider's stated purpose if the teacher does not envision the software as meeting the teacher's goals toward classroom instruction. For each of the challenges listed here, Vongkulluksn et al. (2018) argued that a key indicator of overcoming or preventing negative teacher perception of classroom technology was to build their positive viewpoint toward technology prior to its introduction. They argued that the teacher perception of the value of classroom technology might be the key consideration as to how support of the technology is actually realized into action. In a related study, Brown (2016) stated that learning how to utilize the new technology and incorporating blended learning into the pedagogy involves a time commitment that teachers indicate as a factor in their decision not to integrate.

Al-Hunaiyyan et al. (2018) stated that policies of administrative personal are instrumental to the success of mobile learning or M-learning environments both from pedagogical and technical support perspectives. In addition, Greene and Hale (2017) stated that there is no information available that informs administrators on what constitutes support for teachers making the decision to implement blended learning classroom technology. Al-Hunaiyyan et al. argued that resistance to change by all stakeholders is a natural phenomenon and M-learning is no different, so administrative personnel would be wise to consider this when planning technology changes to classrooms. Al-Hunaiyyan et al. further argued that social norms could become barriers to technology, especially if the technology challenges the teacher's perceptions and attitudes, e.g., technology is perceived to remove a level of control the teacher currently enjoys. In contrast to the concern of social norms and technology integration, Al-Hunaiyyan et al. reported that 71.80% of teachers believe that applications associated with social media platforms can enhance learning.

In their study of 60 K–12 schoolteachers, Cheok et al. (2017) stated that failure of an initiative in education frequently occurs because administration has lacked the understanding of how to encourage teachers to participate in professional development or they were ignorant of the factors that determine the teacher's decisions to implement classroom technology pedagogy. Cheok et al. argued that practices developed by administrators in which training and by-in were instilled into teachers, created an improved perception of classroom technology integration of a blended learning paradigm and in turn increased the necessary adjustment to the teacher's pedagogy.

Stödberg and Håkansson Lindqvist (2017) stated that teachers are often seen as the cause of obstruction in ICT integration but often it is lack of PD opportunities that lead to the teachers not integrating technology rather than willingness to utilize ICT. Stödberg and Håkansson Lindqvist argued that a learning management system (LMS), which is implemented to better facilitate ICT integration, requires training on the teacher's part and a cooperative arrangement between all levels of the organization to be successful. They further argued that teacher training in an LMS would decrease the time required to implement ICT in the classroom. As a result of their survey of 470 teachers in 49 K–12 schools, Stödberg and Håkansson Lindqvist concluded that LMS is a time requisite endeavor that can be addressed through professional development that is based on what the teacher needs.

Vongkulluksn et al. (2018) stated that challenges to implementing classroom technology could affect a teacher's perception of the effort, or ease of use, of adding the technology to his or her pedagogy. In addition, Zehra and Bilwani (2016) recommended that before the decision is made to purchase technology for the classroom, it would be prudent for the administrator to include the teachers involved. They continued that the questions to ask should revolve around the classroom environment to include the physical layout, the storage available, the size or dimensions of the classroom, etc. De los Arcos et al. (2016) concluded that a major point of inquiry that effects teacher perception are the students involved: It is important that the students will be able to utilize and gain from the implementation of new classroom technology. A teacher's perception on how he or she

will implement technology in a manner that benefits the students will drive his or her decision to implement (Vongkulluksn et al., 2018).

Summary

Perceived usefulness by the teacher matters because it is seen as an indicator as to the likelihood that he or she will implement classroom technology. The research has shown that ease of use often forms the perceptions of the teacher that in turn lead to perceived usefulness. For example, Vongkulluksn et al. (2018) discovered that teacher perceptions of the usefulness of technology were a significant predictor of the quality and quantity of classroom technology integration. Administrators play a key role in developing teacher perceptions by creating an atmosphere where technology integration is seen as an important policy stance and where professional development opportunities are regularly available and supported, particularly in relation to classroom technology initiatives. Administrators also need to include teachers in the decision-making process and ensure that the infrastructure needed to support technology is in place prior to implementation.

Whether or not technology is available to a classroom teacher, it is his or her decision on how it is implemented in the classroom (Comi et al., 2017). Understanding the thoughts and rationale behind these decisions helps to provide information and training to educators that will allow them to make an informed decision about adding technology to their classes. The ultimate benefactors will be the students as Kellerer et al. (2014) pointed out. A significant theme in their research was that blended learning creates a student-centered environment where the teacher is a facilitator of learning. Another benefit is the prevention of wasted material and expenditures on programs that have high quality and

proven effectiveness from not being used because the teacher made an uninformed decision based on personal preferences or misconceived ideas (Cheok & Wong, 2015).

The information in this study can be used to effect change by creating programs where teachers who have had little to no exposure to technology-based education can gain a strong appreciation for blended learning technology and recognize the potential learning opportunities it can bring. Vongkulluksn et al. (2018) argued that large amounts of money are being expended to build the technology infrastructure to support classroom instruction initiatives, like blended learning, but little investment has been made to improve teacher's perception of the usefulness of these technologies. They proposed that the next logical step would be to develop initiatives designed to reduce the disparity between teacher's perceived usefulness and ease of use of new classroom technology and the actual implementing of it. To examine the perceptions of teachers in regard to classroom technology integration and blended learning, the findings of this study fills the gap and provides insight that teachers can use to understand the influences on their negative perceptions of technology and ensure higher levels of classroom technology integration, and in turn increased student learning. With sparse studies exploring the perceptions of high school teachers regarding their decision to implement blended learning pedagogy in their classroom, this study sought to understand high school blended learning and the factors that influence a teacher's decision to implement blended learning in his or her classroom. The following chapter provides an overview of the research design and rationale that will investigate these perceptions related to blended learning and the perceptions of teachers toward classroom technology integration.

Chapter 3: Research Method

The purpose of this phenomenological study was to explore the perceptions of high school teachers regarding their decision to implement blended learning pedagogy in their classroom. I sought to understand high school blended learning and the factors that influence a teacher's decision to implement blended learning in his or her classroom. This chapter includes descriptions of the research design, the role of the researcher, the methodology, and issues of trustworthiness. A discussion of how I selected participants and how I collected data for this study is included. Participants were teachers who are currently utilizing, or had the opportunity to utilize, blended learning pedagogy in at least one class.

Research Design and Rationale

The focus of this qualitative study was the perceptions of a high school teacher toward blended learning pedagogy and the way those perceptions influenced his or her decision to implement blended learning in to the classroom. To gain an in-depth understanding, I conducted interviews and then coded the transcripts of the responses through a phenomenological approach. This qualitative approach through a phenomenological lens was well suited to the goal of understanding the teacher's thought processes in context with the research questions (see Eddles-Hirsch, 2015).

Research Questions

RQ 1: How does the perception of a high school teacher regarding the usefulness of technology affect his or her decision to implement blended learning pedagogy?

RQ 2: How does the perception of a high school teacher regarding the ease of use of technology affect his or her decision to implement blended learning pedagogy?

Eddles-Hirsch (2015) stated the following:

> In a phenomenological study, the in-depth interview transcript forms the basis of the data. It is through the participants' descriptions of the phenomenon being investigated that the researcher is able to uncover the invariant structures or essences of the phenomenon being investigated. (p. 254)

This was the basis for choosing this method of study, as it provided the in-depth understanding of the phenomenon from the participants that experience it, which lends credibility to the results.

The rationale behind choosing qualitative research over quantitative was the need to gain an in-depth understanding of the personal decisions a teacher makes toward implementing classroom technology, including the intricacies of perceptions and how those influence the decisions. Quantitative research data could provide statistical analysis of the numbers involved, but not the reasoning behind the numbers. Creswell (2012) stated that when the desired result of research is to gain a deeper understanding of a phenomenon, then the researcher should lean toward a qualitative approach. The five methods of qualitative research are: ethnography, narrative, phenomenological, grounded theory, and case study.

According to LeCompte and Schensul (2010), ethnography is the emersion of the researcher in the environment of the participants. This approach was not appropriate for this study because I did not work in the locations I received information from, and factors

that may or may not influence the perceptions of the participant teachers was not equivalent to my perceptions as an educator from a different working environment. Lewis (2015) describes narrative as a combination of events over time that is the collective stories of the participants, which are then explained in an overarching theme. Since the theme of the study was already established, this approach was contradictory to the purpose. Theory development or reinforcement was not a goal of this study, therefore grounded theory did not fit because it utilizes interviews and documents to confirm or develop the underlying theory explaining an event or series of events (Lewis, 2015). According to Lewis, case study is singular or multiple events or data sources providing a deep understanding of a cultural phenomenon in which the researcher is primarily interested in demonstrating the effectiveness of a particular program, which this study was not designed to do. Lewis stated that phenomenology includes interviews and other information gathered through observation and from documentation to form an understanding of a phenomenon. I chose the phenomenological method for the current study because it best allows for the insight into the motivations of an individual based on his or her perspective of the phenomenon examined.

Role of the Researcher

As the researcher, I was the interviewer. I recorded, both electronically and in written form, the responses of the participants. The participants were teachers at high schools in Northern California. I did have an affiliation with some of the participants in that I worked in the same school district, but I did not have a previous relationship, either personal or professional, with any of the participants in the study. I established contact

with administration personnel via email request who identified qualifying participants, e.g., those who had experience with blended learning pedagogy as defined by this study (copy of invitation in Appendix A). I then sent an invitation (Appendix B) via school email to the qualifying participants.

Researcher bias in a qualitative research study can be problematic if not addressed and potential risks accounted for, especially as it relates to the previous life experience and prior knowledge of the researcher (Patton, 2015). As a teacher and military instructor for over 30 years, I have been fortunate to experience a multitude of technology-based instructional initiatives. From the introduction of computers in the classroom as a basic word processor to high tech interactive whiteboards, I have been witness to a lot of innovation. I have not had direct experience with blended learning, other than my research conducted to prepare for this study. I maintained journal notes and continuously self-reflected to monitor how I interpreted data collected in this study to ensure researcher bias was minimized and accounted for.

Following the guidelines presented by Rubin and Rubin (2012), researcher bias was minimized by developing the interview questions in a manner that allowed for flexibility of the conversation had the interviewee taken the conversation in a different direction. A power relationship between the interviewees and me was minimal as we were all on the same level as teachers. The only power perception potential would have been toward me as the interviewer. I was sure to dispel that assumption by establishing a rapport with the interviewee and created an atmosphere of equality as two educators sharing experiences and gathering information for craft improvement. I did not foresee

any ethical implications, as I was not conducting interviews with coworkers or individuals who would be considered subordinate. There were no incentives offered to an individual or entity for research participation.

Methodology

Within this section, I describe the participants, sampling method, and instrumentation used in the study. The participant discussion includes characteristics of the population of teachers who work at a different school site then me who I recruited for the study. I defined the sampling method with attention to sampling size reinforced by the literature. The instrumentation that I used within the study I discussed along with its relation to the overall goals of the research project.

Participant Selection Logic

I selected the participants for this study from public schools in the southwest region of the United States that have implemented blended learning pedagogy. After Institutional Review Board (IRB) approval, I randomly called the administration office of schools in the region and asked if they offered classes in any subject with a blended learning pedagogy option. If a school confirmed that they offered classes with a blended learning option, I asked if the administrator had authorization to give permission for teachers to be contacted and interviewed. If the answer was yes, I made a formal inquiry via email of the administrator to conduct the research, including a request for the email addresses of the teachers who taught the blended learning classes so they could be contacted. I interviewed 11 teachers, chosen from the pool identified by the school administrators. I contacted the teachers through school email to invite them to participate.

Given the type and nature of the study I conducted, a sample size of 11 was sufficient to capture the essence of the phenomenon that I studied. Mason (2010) argued that data saturation could occur with small sample sizes or large sample sizes depending on the study being conducted. Mason defined theoretical saturation as the point at which there is not new information discovered during analysis of the data, as compared to the samples already received. If there is new data, it is added to theory development, if not, then the theory is considered well developed and no more sampling is needed. Grades K–8 and college level teachers were not included to help narrow the focus. The rationale was that grades K–8 are not normally co-located with high schools and college level was excluded because the study focus was on grades 9–12. My sampling plan included interviews.

I used utilization-focused sampling. Patton (2015) stated that this sampling approach is used to inform decision makers on a phenomenon and involves choosing purposeful case samples that provide explicit data to support the findings. I interviewed teachers who have experience with grades 9–12 blended learning in the classroom and who spoke to the hands-on, operational realities of this teaching pedagogy and their perceptions. I recruited 11 participants by sending email requests to teachers asking if they were willing to participate in my study by being interviewed. Dependent on the number of affirmative responses, I chose the 11 people from the affirmative responses. If I had not gotten at least 10 affirmative responses, I would have sought further participants by sending out more emails until I had confirmed the 10 participants needed for this study.

In a qualitative study of blended learning, Salim et al. (2018) interviewed five educators in a medical post-graduate setting. They were able to collect enough thematic

data to provide conclusions on how blended learning pedagogy is perceived by the educator participants in classroom pedagogy influences as well as student participation and performance indicators. Salim et al. noted that a strength of their study was the manner in which the perceptions of the participants were captured through the interview process. They acknowledge however, that the limitations of a single study site and a limited pool of participants may not have revealed a more thorough theme description.

Instrumentation

There are four concepts that were at the heart of my questions: teacher perceptions, professional development, institutional support, and implementation. Teacher perception of blended learning was the focus of my study and therefore questions regarding this concept are implicit. Gough et al. (2017) noted a lack of research regarding K–12 blended learning. Gough et al. suggested that questioning based on the teacher's perceptions of blended learning would be helpful in informing other K–12 entities in the decision making process on how to best implement blended learning. The questions I developed from the research aligned with the recommendations of Gough et al. and informed my study with the insight from the teachers interviewed.

Several studies cite professional development as a key factor in determining whether teachers are comfortable implementing technology in the classroom, especially blended learning technology. Archambault et al. (2016) conducted a multistate study and concluded that the majority of teachers recognize the importance of including technology as a teaching component. Archambault et al. stated that in-service and pre-service professional development is needed to prepare and train teachers to utilize technology in

their classes. Interview questions regarding professional development are important in confirming the link between it and incorporation of blended learning pedagogy in the K–12 classroom.

Cochrane (2014) described the most critical factor of success of implementation of technology in the classroom as institutional support, including the areas of technical and pedagogical. Technical support includes equipment hardware, Internet access, and service personnel. Pedagogical support includes training on how to use equipment and implement classroom instruction, materials directly involved with instruction, and licenses to access online materials.

Implementation challenges were reported by Oliver and Stallings (2014) as consisting of context, pedagogy, and technology. Teachers need to understand the basic concepts of the programs being implemented before they can properly engage in training. Terminology, specific components, and the basic outline of the program provide the needed context for a person that may be new to the concept. Each program will have a unique pedagogy that is more likely to be implemented, let alone implemented correctly, if the teacher has had the opportunity to practice it first. Finally, each technology piece of equipment has operating characteristics that should be explained, shown, and afforded practical time to the learner before being expected of the teacher to use in their classroom. I designed the interview questions to shed light on this process and to indicate if a lack of any of these was having a negative influence on the teacher's perceptions. Other data sources that I used included journal notes before and after the interviews and notes on verbal cues of the participants during the interviews.

I interviewed each participant to explore the perceptions toward the usefulness and ease of use of technology in the pedagogy of blended learning. I developed the interview questions as a result of a review of the literature on blended learning. The interview questions were vetted by a panel of three people with terminal degrees in education and adjusted in accordance with their recommendations to ensure that the answers from participants would be relevant to the research. I listened to and evaluated the dialogue resulting from the interviews of high school teachers who teach blended learning, then used the information to provide recommendations for other educators. The figure in Appendix C contains the interview questions in relation to each research question.

Procedures for Recruitment, Participation, and Data Collection

I contacted administrators within the local region, for convenience, seeking schools that had implemented blended learning in their classrooms. After an administrator agreed to allow his or her staff to participate in the study, I contacted the staff via school email (Appendix B) informing them of the nature of the study and invited them to participate. I selected 11 respondents who qualified and agreed to participate. A qualified candidate was one who had the opportunity to implement blended learning in his or her classroom, whether or not it was utilized. To determine who was qualified, I asked the candidates in the invitation email if they had the opportunity to implement blended learning in the classroom at the high school level. After 1 week, I did not receive enough respondents in the first round of requests. I sent another request to those who did not respond to the first email asking for a response, yes or no. When there were not enough participants after the second round, I sought out another school for participants and

followed the same procedures. I sent the informed consent document via email to the respondents and asked them to return a signed copy via email. I selected the participants from those who consented to take part in the study.

The interview method I used was remote audio recording. I recorded the interviews on a computer using the computer's built-in microphone. I also recorded notes for each interview in a journal that included my observations of the interviewees, such as verbal cues, as well as my thoughts as the interviews progressed. I also recorded in the journal any post interview analysis including quality of the interview from my perspective and any extraneous information that may have arisen during the discussion.

Interview information was confidential with any information included in the final research document coded to not reveal which participant supplied it. The coding of participants was alphanumeric, with a 1, 2, 3 format for location and pseudonym for each participant at a location, e.g., 1 indicated a participant at location 1, 2 a participant at location 2, etc. All electronic and hard copy information was maintained by me and locked in a safe in my home office when it was not actively being used to write the dissertation. I was the only person with access to the raw data. After 5 years, the electronic and hard copy participant information will be destroyed by reformatting and shredding, respectively.

I sent the participants a copy of the transcript that I prepared following the interview, and afforded the opportunity to review the interview by reading the transcripts. I asked each participant if there were any adjustments to his or her responses or additional comments he or she would like to make. No participant responded indicating they would

like to make adjustments. Known as *member checking*, Harper and Cole (2012) stated that this process can be called "participant verification" (p. 2) and is a way to validate interview information. If at any time a participant desired to exit the study, he or she could have done so by informing the researcher verbally or in writing and any information obtained from the individual to that point would have been destroyed. No such request was made.

Data Analysis Plan

The key elements of data analysis that were consistent with my chosen approach were identifying terms associated with blended learning and teacher perceptions, grouping these into operational combinations, and then identifying educational phenomenological categories. The potential phenomenological categories were: perceptions, professional development, implementation, and support. NVivo coding was applied to highlight language in the participant responses that revealed repeated patterns of speech within the data. I followed Meyer and Avery's (2009) advice and printed my interview transcripts, then hand wrote the coding in the margins. This process of writing on the paper provided me with a connection to the information that would not have been present in an electronic form and made it easier to make adjustments to my initial coding as I identified emerging themes. NVivo was utilized to confirm the themes and codes.

Saldaña (2016) stated that when coding qualitative interview data, any information that appears to be discrepant from either a list of anticipated codes or codes that are inconsistent from other participant data, be thoroughly evaluated and checked against the background research. If the information was found to be an outlier, the researcher has the

responsibility to include it in the final analysis so that all possible themes and participant paradigm information was present, even if the particular data point was a less likely influencer on teacher blended learning pedagogy decision making. No such outliers emerged from the coding of participant data in this study.

Issues of Trustworthiness

Choosing participants with knowledge of the subject matter enhances credibility. To improve on this, participants were selected based on their actual experience with classroom blended learning and the decisions required to implement it (Rubin & Rubin, 2012). Adhering to good research principles and designing the research, especially the research questions, to be applicable to multiple scenarios, transferability is present. Utilizing peer reviews and university oversight personnel to validate proper protocol and procedural guidelines, the research findings were consistent with proper research conduct rules and therefore repeatable and dependable. Protecting against researcher bias or other invalidating situations, safeguards were in place that ensure findings presented were the result of data collection and not opinions or observations of the researcher based on personal feelings. All data were based on participant responses and backed up with an audit trail of all collected data giving the research confirmability.

Credibility

Credibility, or what Patton (2015) called internal validity, is the assurance that what is presented in the study is truly a representation of what the participants reported and was established through multiple means. By utilizing a reflexive journal, I documented observations made during the interviews and recorded my thought processes.

A comparison of data across interviews in addition to feedback from interview participants to validate the accuracy of their transcription also enhanced credibility.

Transferability

In-depth analysis of the interview data provided sufficient details to allow others to determine if the findings are transferable to other contexts, or what Patton (2015) identified as external validity. Detailed descriptions of the participants, research methods employed, and documentation instruments used allowed for the comparison of this study to other research in the field. A firm grounding of this research to current and past research studies and theories provides usefulness to other researchers to compare this study to others.

Dependability

Patton (2015) defined dependability as the reliability of research or how there was a well thought out plan with a path laid out that sequentially described data gathering and was well documented. Dependability of the results was enhanced by the use of a reflexive journal and by keeping detailed records of the interviews and the subsequent analysis of the data. An audit trail of all data collected, including interviews, observation notes, and researcher journals and processes used to evaluate the data were maintained.

Confirmability

To address confirmability, or what Patton (2015) calls objectivity, is to enhance the trustworthiness of the findings by connecting all "assertions, findings, and interpretations . . . to the data in readily discernable ways" (p. 685). I was forthright with all concerns that may have arisen from researcher bias. As a classroom teacher who has

had to make technology decisions, I felt it was important to share my experiences with participants for contextual reasons and to establish rapport. Providing detailed descriptions of the procedures and methods make the findings plausible for other researchers.

Ethical Procedures

This research study complied with all ethical considerations and standards recommended by the Office of Sponsored Research at Walden University. I obtained IRB approval prior to any recruitment of subjects or data collection for this research. The IRB approval number for this study is 05-14-19-0185794. I provided all privacy policies and informed consents to the participants and obtained signatures from the participants via procedures outlined in the previous sections. I informed all participants and reminded them of their ability to withdraw from the study at any time. I removed any identifying information of the participants from all data sources and secured materials in locked storage, and encrypted data if stored by electronic means. I will destroy participant data five years from the date created. No participants who took part in the study had a direct or in-direct working relationship with the researcher. These protocols enhance confidentiality within the research study.

Summary

This chapter included the research design, the role of the researcher, the methodology, ethical issues considered, and issues concerning trustworthiness for a study concerning the perceptions of high school teachers and their decision to implement blended learning pedagogy. I provided a description on how I selected teachers to participate, procedures for obtaining informed consent, the recording of interviews, and a

listing of the interview questions asked. I selected the participants in this study from respondents of an invitation to participate from high schools currently utilizing blended learning pedagogy. I collected data through interviews with the participants selected. I recorded the interviews, transcribed them, coded them for themes and patterns, and then analyzed the results. Chapter 4 and Chapter 5 include an analysis of the data and a discussion of the findings, respectively.

Chapter 4: Results

The purpose of this phenomenological study was to explore the perceptions of high school teachers regarding their decision to implement blended learning pedagogy in their classroom. This study can provide information about how a high school teacher's perceptions of blended learning can affect the decision to implement the pedagogy in his or her classroom. By identifying the influences of perceptions on pedagogy use, a teacher can use this information to inform his or her decisions on approaches to positively affect his or her perceptions, thereby increasing the likelihood of his or her decision to implement blended learning. My intent was to gain a deeper understanding of high school blended learning and the factors that influence a teacher's decision to implement blended learning in his or her classroom. The following research questions aligned with the study exploration and framed the development of the interview protocols that informed the design of the data analysis:

RQ 1: How does the perception of a high school teacher regarding the usefulness of technology affect his or her decision to implement blended learning pedagogy?

RQ 2: How does the perception of a high school teacher regarding the ease of use of technology affect his or her decision to implement blended learning pedagogy?

In this chapter, I present the results of the study. I develop the context of the study through descriptions of the setting and demographics. I also describe how the findings emerged through the analysis of data and the identification of constructs and themes related to the research questions. I viewed the analysis of the interview data through a

phenomenological lens. Finally, I specify the steps taken to enhance trustworthiness as well as provide data-rich examples to illustrate the findings.

Setting

The four schools included in this study were located in the southwest region of the United States. All four schools were public schools. I conducted all 11 interviews via telephone. All 11 interviews took place in a setting of the participants' and my choosing (all parties were in different locations and therefore chose their setting). For me, the typical setting was a home office where there could be isolation for the purpose of preventing interruption and for privacy of all involved. The participants did not disclose their interview location, as it was not pertinent to the study to have this information.

Demographics

The participants included 11 high school teachers from four different high schools. Each teacher taught at least one subject that had a blended learning curriculum option, as defined by this study. All teachers taught at schools that were located in the southwest region of the United States. Table 1 lists the pseudonyms used for each participant.

Table 1

Participant Demographics

School	Name	Gender	Subject(s) Taught
#1	Jane	F	English, French
	James	M	AP Psychology
	Jack	M	Economics, English, History
	Robert	M	Health, Life Skills
	Mary	F	English
	David	M	English, Math, History
#2	Michael	M	History
#3	Susan	F	Math, Science
	Kim	F	English
	Kathy	F	Graphic Arts
#4	Richard	M	English

Note. Participant names are pseudonyms.

Data Collection

After obtaining IRB approval from Walden University (authorization 05-14-19-0185794), I sent a letter of cooperation via email to six schools in the southwest region of the United States. I received permission from four administrators to contact teachers to participate. I contacted 10 high school teachers via email with a copy of the consent form attached. Six teachers responded with the required "I consent" and I sent a follow up email requesting a date and time to conduct the interview. In addition to requesting the date and time of the interview, I asked participants for contact information for other teachers at their site who might be available for an interview. Ten more names were provided and I contacted those teachers in the same manner for participation. Five more teachers agreed to be participants for a total of 11, which was sufficient as the original target was at least ten.

I conducted the 11 interviews via telephone with the researcher and participants in remote locations from each other. I utilized a laptop computer with recording software to record the audio via the built-in microphone. One of the 11 interviews was interrupted by a dropped call. I immediately paused the recording, reestablished the phone call, reminded the participant of the question being addressed, and continued. I recorded the episode in my notes and on the interview transcript. I conducted the 11 interviews at various dates and times over the course of a five-week period.

A semistructured interview protocol, with probing follow-up questions used as needed, ensured that the participant's responses aligned with the research questions. Utilizing open-ended questions (see Appendix C) for the interview, the participants were able to expand upon their initial responses and share personal insights into the perceptions they held about technology in the classroom and blended learning curriculum. I kept notes during the interviews and was sure to document any statements that stood out or any impressions made in my research notebook before closing the session. In reviewing my notes, it became apparent that several themes were consistent across many interviews.

The average time of the interviews was approximately 25 minutes. I converted the interviews to MP3 files and uploaded them to NVivo for transcription. NVivo allowed for the viewing of the transcription while listening to the audio recording. I used this feature to compare the transcription to the audio and then edit the transcription where necessary to reflect the conversation, verbatim. Once I was satisfied that the transcription was accurate, I converted the transcript to a Word document and uploaded it to the NVivo coding program. The result of this process was over 150 pages of interview transcript data. I sent

each participant a copy of his or her interview transcript for member checking. No participants provided any changes or feedback.

Data Analysis

The data analysis method was a multistage approach to move inductively from smaller coded units to larger statements that included categories and themes. The first step was taking a printed copy of all the transcripts, noting first impressions, and conducting self-intuitive analysis using provisional codes derived from the literature. The second step was rereading the transcripts, line by line, labeling phrases having relevance that were repeated among the interviews, were surprising, or correlated with theory or other published scholarship. For example, David, Kathy, Kim, and Michael all discussed how beneficial classroom technology was for student learning, especially those with special needs. I chiefly used the coding process to identify patterns in the data that related directly to the phenomena of interest and then identify connections to the specified conceptual framework of social cognitive theory and the technology acceptance model. The codes that emerged from the data were positive and negative attitudes toward technology, blended learning, perceptions of ease of use and usefulness, professional development, information technology support, and administration support.

A review of the transcripts revealed the personal experiences and feelings of the participants on blended learning pedagogy and the influence classroom technology has had on their perceptions. I placed a copy of the purpose of the study, research questions, and conceptual framework in front of me as I moved from reading and highlighting key passages of the interview transcripts to coding those passages. Next, I collated the coded

passages into themed groups to allow for comparison between participants to look for common phrases within the groupings to show patterns of like perceptions. This method of coding, grouping, and analysis allowed me to clearly identify recurring themes and strengthen the validity of my results.

Evidence of Trustworthiness

To ensure the highest level of trustworthiness I utilized several strategies. As supported by Rubin and Rubin (2012), these areas are credibility, transferability, dependability, and confirmability. I addressed each of these areas, directly associated with qualitative research, to convey how I used them to maintain the highest level of trustworthiness for the data collection and analysis of this study. The following sections specifically detail evidence to support the four areas.

Credibility

I maintained credibility by ensuring that the data presented in the study is truly a representation of the participant's perceptions and comments. I provided participants verbatim copies of their interview transcripts for member checking and I invited them to provide additional comments or editing. I maintained a research journal during the interview process to note any irregularities and to document the interview process for each participant.

Transferability

Utilizing a semistructured interview technique allowed for interview questions to be followed up by me with probing questions, if needed, to provide clarity or to ensure I aligned answers with the research questions. Although the high school teachers who

participated were in a relatively small geographic region, the public schools they service are indicative of the state and likely country, as they were a mix of urban and rural communities. Since the perceptions, or feelings, of the teachers were the focus of the study, these facets of a public school teacher's experience are highly transferable to others in the profession.

Dependability

As defined by Patton (2015), dependability involves a well thought out plan with a sequentially laid out path and has a well-documented gathering of data. Through detailed record keeping and a reflexive journal, I documented data gathering throughout the interview process. I maintained a complete audit trial of interviews, research journals, and observation notes. I used member checks to ensure that the interview data findings were based on the participant's responses and were an accurate portrayal of their input. By utilizing the semistructured interview approach, my questioning remained aligned with the research questions but the participants were able to answer in a candid and individualized manner.

Confirmability

To enhance the trustworthiness of the study, I established confirmability by ensuring that potential researcher bias was addressed in any circumstance that had the ability to contain it. As a fellow educator with knowledge of blended learning pedagogy, I was careful not to share my feelings about this teaching method, or educational technology in general. The audit trail of interview procedures and result analysis further

developed confirmability as these established certainty of proper research ethics and that data results were complete and thorough.

Results

I organized the results of this study by the research questions with the themes that emerged from coding of the data. The purpose of this study was to explore the perceptions of high school teachers regarding their decision to implement blended learning pedagogy in their classroom. A thorough review of the interview transcripts and research journals resulted in the following emergent themes for both research questions: Positive or Negative Attitude Towards Usefulness of Blended Learning and Positive or Negative Attitude Towards Ease of Use of Blended Learning.

Figure 1 is a graphic organizer to display the relationship of the different themes to the research questions.

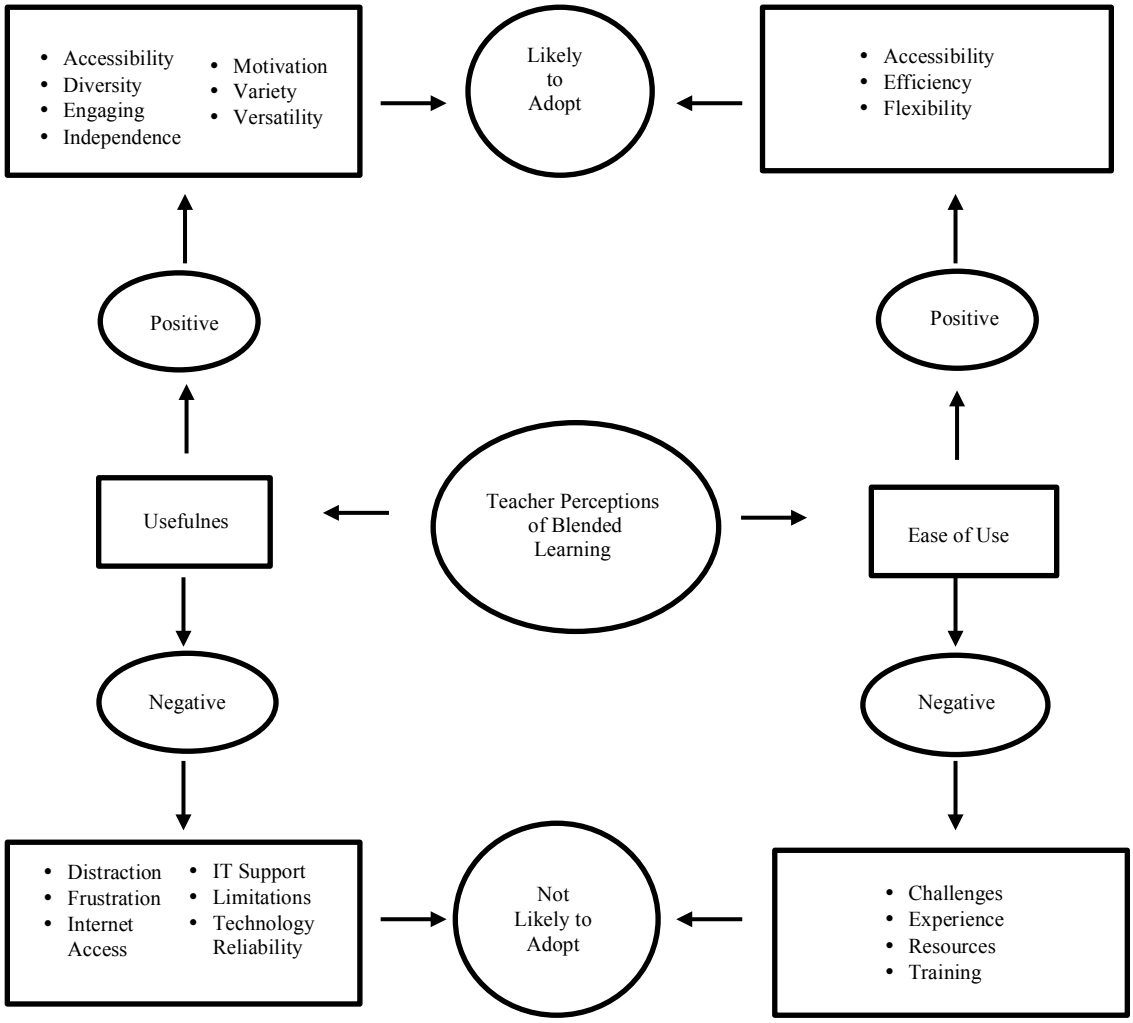

Figure 1. Concept map of relationship between teacher perceptions of blended learning and decision to adopt.

Research Question 1

The first question I asked was how does the perception of a high school teacher regarding the usefulness of technology affect his or her decision to implement blended learning pedagogy. The theme of usefulness was broken down further into the subthemes of positive and negative. The codes associated with the theme of positive usefulness were: *accessibility, diversity, engaging, independence, motivation, variety,* and *versatility*. The

codes associated with the theme of negative usefulness were: *distraction, feedback, frustration*, *Internet access, IT support, limitations,* and *technology reliability.*

Positive usefulness. For this subtheme, the focus is on the perceived usefulness of blended learning pedagogy the teacher has and how his or her experiences have shaped those perceptions. Some of the comments made during the interviews were generic in nature and simply referred to the positive feeling many teachers have toward electronic classroom technology. For example, Jack stated, "technology is a great tool," and James stated, "there are effective ways to use technology now, and it's only going to get better." Kathy stated, "I really don't think that you can have an effective class without a decent amount of technology." Kim was a little more pragmatic and stated, "I think that it is very important that our students in this century learn how to be good practitioners with technology." Mary simply stated, mirroring Jack's first comment, "I think that technology is a very good tool to use." Michael stated he believes "that technology is a great resource since there is a lot of opportunities and platforms out there and ways for students to access information and make it more engaging." The following codes are more specific regarding the positive attributes associated with electronic classroom technology in support of blended learning pedagogy.

Accessibility. Within the code of accessibility are issues associated with the ability to access the material. For example, David pointed out that electronic media used to be housed on desktop or laptop computers via proprietary software that could only be accessed on the equipment to which it was installed. He stated that having web-based curriculum which can be accessed by any device with Internet access has "made the

accessibility for those students that much higher than it once was." Jack mirrors this sentiment by explaining that electronic technology media in a blended learning pedagogy setting allows him to "always have a resource for the student" when needing materials for students who may have completed tasks prior to others in the class. For James, accessibility can mean allowing students with disabilities to have access to the curriculum because it "can make reading easier, hearing easier, [and] all kinds of adaptive devices for that." In addition, James appreciated the connectivity that technology affords, especially in the blended learning classroom where students and the teacher are often on an electronic device. He said that these devices "keep us connected" and that the devices are "able to access everything and contact each other, keep in contact with each other constantly." He added that electronic classroom technology is "just an amazing tool for opening up the universe to the kids."

Diversity. The word diversity refers to the different styles of learning that students bring to the classroom. The way Jack explained it was that "whether they're auditory [hearing] learners, visual [seeing] learners, or kinesthetic [moving or physical manipulation] learners, there's ways to use technology to meet the needs of each of those students." He added "it's [technology] just a great tool that can help us reach our students in a lot of different ways." In regards to blended learning pedagogy specifically, Jack stated "technology allows us to approach that in such a way as to where we can meet the needs of these different learning needs of our different students." James stated this difference in learning styles more simplistically and stated, "I do use the blended learning approach because students, every student is different. Even within a classroom, several

students working on an [the same] assignment and all of those students are different." Richard also saw the benefit of multiple accommodations for a variety of learning styles by stating:

> For me it helps with being able to hit all the different learning types like visual learners, I can put, they can watch videos, they can have, you know, pictures and stuff all in one place, auditory learners, they can listen to what, you know, our reading is, you know, or text to word, and all of that stuff.

He continued, "I think it [blended learning] gets all learners, all the different learners are able to utilize, you know, through the technology to learn. They all really enjoy it that way."

Efficiency. Efficiency relates to the elimination of steps or the saving of time to complete a task. Jane spoke to the need to grade daily writing assignments and how electronic classroom technology makes it "easier for me to grade that on a daily basis without taking up as much time within my classroom." Michael utilized an online notebook with his students as part of his blended learning curriculum and stated, as far as the online notebook, "it's a lot of stuff on there for the students to access and not having to have to hand out or keep work papers or make copies that have piles and piles of handouts" saves him time and energy. Michael summed it up by stating, "you can exclusively do stuff all online through the tablets and not even use the textbooks."

Engaging. Student engagement, or interest in a topic, can be a challenge as they are used to fast moving, dynamic videos and games. Classroom technology provided a means to "keep them engaged" according to Jack, as he listed a variety of tasks that kept

the students attentive to the information being presented. Jack continued to explain that understanding each student's learning style and being able to select blended learning pedagogy components that meet that individual's style, allowed him to "keep them engaged and to give them, you know, a different learning style, you know, approach." Michael stated, "I think using the technology has helped those kids in my class by being able to, you know, listen to the lecture or be able to have the material be read to them or even watch a video." Michael added, "data tells us that kids will score better on this if they have technology, you know, if they're able to use technology and learn through technology." Robert believed that blended learning pedagogy "enhances your objectives" because "the kids connect with it very quickly." He added, "I think it provides, definitely, assistance in the area of comprehension. I think it reinforces, really enhances the comprehension piece. They [the students] seem to capture more."

Independence. Allowing students to have more autonomy in their learning and empowering them to be proactive learners is how many teachers have expressed the independent nature of blended learning. David put it this way: "It helps you learn what the student needs and so some students can function a little bit more independently." David continued, "I use it primarily when aiding students through some material that is a little bit more difficult for them to master." Jane's perception of how electronic classroom technology can create independent students in a blended learning environment was that the students have a greater access to material that they can then use to "strengthen their arguments." Jane also stated, "they can move at a pace that they're comfortable with without having to be hindered by their classmates or maybe pushed ahead, well, you

know, before they're ready to actually continue to the next step of the curriculum." According to Kathy, "it's super beneficial for me because students can work at their own pace." Kathy also stated, "I feel I can, I can get a lot more to my students with technology. They can learn a lot more and very much quicker time. They have access to this information, even outside of the classroom." In addition, Kathy felt that blended learning creates independence because the students can "get as far ahead as they want at their own pace and then I'm there for them when they get to a part of the curriculum that they don't understand." Kim stated, "I think that it helps students learn to be a little more responsible for their work and again, they're preparing them to be, you know, proficient in this world that we now live." One way that electronic classroom technology created independence was by giving the students access to a broader resource base than they would otherwise have with printed material. As an example, Mary stated that having an almost unlimited resource of reference material enabled her students to "use those to help them write essays and do the grammar checks." For Michael electronic classroom technology was not only beneficial for the students, he stated, "it gives kids a little bit more deeper answers to what they're thinking" and "there's a lot of things that technology does that we just couldn't do as teachers with pencil and paper." Richard also perceived blended learning as creating independence as he stated, "I think it's good for those kids that, you know, can work independently."

Motivation. Motivation is the ability to cause the student to *want* to learn and be a part of the learning. Jack stated that when it comes to blended learning pedagogy, "there's so many wonderful tools with, you know, the advancement of technology that we can use

to keep students interested, keep students motivated, and to hit the needs of different students." When asked about his use of blended learning pedagogy Jack stated:

> With the students, I think they find it motivating. Some of them are into technology and they find it motivating and would rather create something online than doing a poster or writing an essay, and at the end of the day, we can show that they've learned the content, they've got mastery.

Kathy saw blended learning pedagogy as motivating for her students and stated:

> Rather than just having me constantly telling them all the information it's nice to have an alternative resource, you know, that is something digital, you know, something technological, kind of insight, you know, different kind of excite different parts of their brains and, you know, keep them interested and mix things up.

Variety. Having a varied way of presenting material can keep the information fresh and help make the learning more appealing to a wider audience. Jane stated, "there are a lot of ways that we can use technology in the classroom to enhance the learning environment." When asked about blended learning pedagogy, Michael stated, "it just offers more variety of different activities or different avenues to which I could incorporate different ways of learning to meet the various needs of students." As an example, Michael added, "I could always assign a different assignment video or whatever, if that, if a student needs it, additional help, or whatever. It does, it does give you a lot more [options]." "Richard added to the topic by stating, "I think when they get to do stuff with their hands [and] in their minds, and stuff and be creative, they get more into it." Robert stated:

> I'm just like any other teacher, I'm constantly trying to figure out how to add more and more technology to my classroom because I do believe that it's effective and if something doesn't work, I try something else and keep doing that.

Versatility. The way that Kathy expressed the versatility of blended learning pedagogy by way of electronic classroom technology is stating that you can "engage a lot more students, and I feel like we're having the technology there for them to utilize and access at their own pace." Jack's position on versatility had a broader worldview, specifically when he stated, "a tool that we can use to give students experiences that they really couldn't have because it's clear across the world, or you can connect with students or classrooms across the world." Richard stated, "by having that interactive component, that technology component [of blended learning] the kids, I think, learned a little bit more than if we didn't have that component."

Negative usefulness. This subtheme was representative of a teacher's negative perceptions of blended learning pedagogy usefulness and the influencers that drive these perceptions.

Distraction. Distractions were reported mostly from the teachers observing the students perspective, e.g., students distracted by their electronics or by ancillary programs running on their devices. Kathy stated, "I do feel that technology today is both extremely helpful but also one of the biggest distractions in the classroom. It's hard to keep a huge student body, kind of an eye on every screen individually." Richard stated, "I think technology is used a little too much."

Frustration. In the realm of classroom educational technology, frustration can come primarily in two forms: frustration with the students and their focus on all things electronic and frustration with not having reliable computer technology and the quantity needed to teach a class full of students. Kathy stated:

> I also feel that it's, being in the classroom and teaching with technology I've developed a hatred for cell phones, and actually technology in general. Like, you're seeing the kids and then how addicted they are to technology and how plugged in they are, it's really hard to pull them away from their phones and make them present.

Kim shared her story of having to schedule computer time in a centralized computer lab with many other classes and stated, "we have not figured out an effective way to share that technology." Kim lamented, "if we had the technology, and I knew my students, that's the other part, I knew my students have the technology, I could really differentiate the instruction I'm giving them." Mary stated, "I actually hate to use technology to teach in the classroom because technology is never my friend when I use it. I find it a big waste of time, most of the time when I'm teaching." Susan stated, "technology can be a huge hindrance in the sense that it often doesn't work, or it can fail you right in the middle of a class lecture, or at the start." Susan also stated:

> Technology, [when] something goes wrong and a large portion of your time is spent trying to deal with the technological issues, or setup, or hook up, or connections, or trying to make things work the way that your lesson has planned on them working. So half of the time things go wrong and your left on stage in

> front of a classroom while your just trying to unplug, plug back in, reboot, restart, going through Windows, shut down, whatever it is.

For Susan, frustration also came in the form of limited access to computers for students to use. She stated, "there are always logistical challenges with trying to book time for the students in the mini lab."

Internet access. Classroom electronic technology invariably involves the use of the Internet as most educational products are now web-based. Maintaining that access has become paramount to a smooth running classroom and having connectivity at a speed that promotes efficiency, prevents frustration, and prevents lost learning time. With regards to student connectivity, both on and off campus, Jane stated:

> It's really easy to say, you know, all students have access to technology, but a good portion of our students don't, which limits the effectiveness of its use. Then I had students come back and say I can't, my parents won't take me to the library, I don't have access to this.

Speaking about connectivity speed, Mary stated, "we don't have enough Internet bandwidth, or whatever it is, or the Wi-Fi is down, or the computer has stopped." Susan stated, "the Internet connection in my classroom is really, for some reason my classroom has a really bad, the Internet site is not very fast for the kids so sometimes they get really frustrated." As an example, Susan stated:

> If I were to have the students use their phones to do a research topic, I would probably get a 30 percent hit rate for students who were actually even able to connect to the Internet in a timely fashion to be able to do that research.

Susan also stated, “my Internet connection is so bad, I can’t get it back in time for my next class.”

IT support. IT support can mean both equipment availability and operational support with functionality issues. Kim mentioned a new curriculum that was adopted by her school, however, “it was adopted for one-to-one [student] devices and they did not put the money to make that happen.” Kim also stated, “I have learned a lot about how to use technology but it’s a little bit challenging at our school because we don’t have the means to effectively use the technology that we’re given.” When it comes to IT personnel responding to issues in the classroom, Susan stated, “there is no such thing as support in the moment during your class period when things go wrong.”

Limitations. Educational technology in a blended learning classroom does not necessarily provide the “best fit” for all subjects. Jane discussed using a blended learning model to teach a French language class and stated, “as a primary source of instruction for a foreign language it was a horrible setup because they don’t get the one-on-one feedback, so the oral and auditory language development was lacking.” When discussing the merits of blended learning pedagogy, Richard stated:

> I think it’s good for, you know, those kids that can work independently but I think if you’re just to tell the kids, here, log on and do it, I don’t think the kids learn as much. For these reasons I don’t use too much technology just because I feel that at times the kids get tired of it, they get tired of always having to use a computer.

Technology reliability. Having reliable technology, electronic equipment that works when you need it, is important to teachers. The way that Jack stated it is "if the technology breaks down, then you've got a real issue." Susan stated:

> I've got a very old desktop computer from the school that is not, nothing connects to the Internet for my projector, so everything is on a USB drive or it's connected to this dummy box that drives the projector, and sometimes it just dies, and it can die right in the middle of a teaching day.

Susan lamented, "I want to use technology, I can't count on using technology."

Research Question 2

The second question asked how does the perception of a high school teacher regarding the ease of use of technology affect his or her decision to implement blended learning pedagogy. The theme of ease of use was further broken down into subthemes of positive or negative. The codes associated with the theme of positive ease of use were: *accessibility, efficiency,* and *flexibility*. The codes associated with the theme of negative ease of use were: *challenges, experience, resources,* and *training.*

Positive ease of use. This subtheme is representative of a teacher's positive perceptions of the ease of use of blended learning pedagogy.

Accessibility. The more accessible the curriculum, the higher degree of student learning is likely to occur. Jane stated:

> Being able to access the curriculum online made it so they could do it at their convenience, they could do it when it was easiest for them and when they had

> questions, when they didn't understand something, having the freedom to come talk to me.

Michael stated, "it helps them just because that's the way in which they've been brought up learning, students, you know, maybe have a little more trouble reading, deciphering texts, you know, maybe finding answers or getting meaning out of a textbook."

Efficiency. Efficiency is the ability to accomplish more work in the same amount of time or accomplish the same amount of work in less time. Jane stated, "if I could incorporate Google Classroom then I can put those activities on to their daily activities and that grading would be easily done and I would not be sacrificing as much time." Michael stated, "you can exclusively do stuff online and not even use the textbook," which he explained helps save time from going back and forth between publications.

Flexibility. In regards to blended learning pedagogy and the associated electronic classroom technology, David appreciates the choices of curriculum and stated:

> I have the freedoms and flexibility again to be able to chew, kind of swing again on the pendulum, so to speak, and I can go more one way and be more hands-on or I can go the opposite way and be more hands-off.

Jack echoed this sentiment and stated:

> So I use it really to reach students in different ways, you know, instead of just standing in front of the classroom and giving a 45 minute lecture every day, you may have days where you have to stand up and lecture, but even then I'm using things like PowerPoint and other slides and my Promethean board, you know, just to break it up a little bit.

Negative ease of use. This subtheme is representative of a teacher's negative perceptions of the ease of use of blended learning pedagogy.

Challenges. There are a variety of challenges that can present themselves in the classroom, and electronic technology has its share. In regards to software, Jack stated, "I thought students could use, well, to sort of make an online portfolio that they could show at the end of their four years of high school, but because it's so unreliable, I stopped." Kim's challenge had more to do with the number of electronic technology assets she had available. She stated, "three computers with 20 students [it] can be a challenge to use technology." Robert stated:

> I find that the [blended learning curriculum] Odysseyware program is difficult for the kids to navigate and the kids claim they don't have access to computers at home. I've heard great things about Odesseyware, but I don't think it's servicing my students as well.

Susan stated,:

> There's always a little bit of that pit in your stomach about, is it actually gonna work the way that I'd plan it out at home or the way that it's worked in the past? Is everything going to work right for me today? It's just so hard, you lose three-quarters of your teaching period just trying to get the technology to work.

Susan also stated, "it can take a while to get all of your classes in sync into the mini labs so that you can use that resource when it's offered."

Experience. The primary reference to experience was how a lack of experience can negatively impact the ease of use perception. Jane stated, "I'm not exactly sure how to

set it [blended learning curriculum] and how to run it, it's too hard during the school year to figure it out." Michael stated, "we're just now implementing the online version of the world history and U.S. history textbooks so I'm not exactly sure what that entails." Michael also stated:

> For me it's easier to look at a piece of paper and scan it as opposed to go see every student's electronic notebook, that's a little cumbersome and that's a little bit too time consuming, it's just easier for me to have a piece of paper to look at.

Resources. There is a direct relationship to the amount of resources available, the quality of those resources, and the affect on perception of the teacher. For example, Kathy stated:

> I have to schedule every single day to take students into our library because of the only computers that they have and so, you know, it's a bit of a challenge, you know, just kind of like having to gather the kids that go into the library and we don't always get, we always have to compete with other classrooms for the technology.

Kim stated, "I do not have [electronic computer] devices for my students on a regular basis." She also stated:

> It would be lovely to have access, but you know with what we have right now, it's just not, it's not effective. It's hard, it's more of a challenge I think to differentiate instruction than it would be if we did have devices and I was able to do that in a blended classroom.

Michael stated, “they [the district] have some other tablets that when they were first implemented they kind of backfired on them. They were not good. They didn’t last long, you know, they had a lot of issues of breakage.” Susan stated, “I only have two student computers in my classroom and it’s often difficult to truly trust that I can have the students do the research on their own.” Susan also stated, “I would also love to see every classroom upgraded to a point where we could actually do all of the things in our classroom on a regular basis that they would be showing us to do.”

Training. Lack of training can have a negative impact on teacher perception of ease of use toward electronic classroom technology and blended learning pedagogy. James stated, “I don’t feel like I have had very much if any training in technology that would help me in my own education in teaching.” Kim discussed how training can be incomplete by stating:

> No one has time to go back to oh let’s finish putting this website together. So I think with professional development needs to be frequent and it needs to be revisited often enough so teachers can actually implement what they’ve learned because I think that’s a big missing piece.

Mary stated, “We keep hearing things like Google Classroom and I had very little training on that and what I have used of it, I absolutely hate, you know, so it’s not something that I personally seek out.” Mary also stated:

> I kind of got a super fast training in one of the meetings we were in, but basically it was you need to create a Google Classroom and they showed us how to do that at

> least. Kind of talked about how to put things in but there was no real training and it was, I just did not enjoy it at all.

Michael was speaking about his district's curriculum adoption and the technology components it has relating to blended learning when he stated, "I'm not exactly sure how I'm going to incorporate all of the things they offer because I really don't know all that is does have to offer, I guess there's gonna be a learning curve." Michael also stated:

> It seems like we always, or I always, want and I guess my colleagues as well, is always asking to be trained more on things. We are asked to do certain things and not adequately or properly trained on them. So in regard to professional development, it's a little frustrating and I'm not sure whose fault it is? Definitely, probably the administration. Seems like we are asked to do certain things or use certain programs things in, training is not really a priority.

Susan stated:

> We have had not nearly as many professional development days targeted around technology as I think any of us as teachers would like to see, we would all love to see more. You can get a million professional development training times and meeting sessions about how to incorporate projects and lesson designs or whatever into your classrooms, but if you can't make the technology work, than those meetings are kind of wasted because you can't make it work.

Susan also stated, "I would love to see more professional development around incorporating blended learning into the classroom and technology."

Summary

In this chapter, I presented the results of the study with a brief description of the purpose and direction of the study, the demographics of the participants, and specific detail given to the means at which the data were gathered. I described data analysis with details on how I dissected the raw data to reveal the personal experiences and feelings of the participants. I explained the primary themes of usefulness and ease of use as well as the subthemes of positive and negative associated with each. Finally, I further distilled the resultant participant interview data that were then used to identify subthemes that emerged from the coding of the transcripts with direct quotes provided to emphasize and confirm that it was participant statements providing the data.

High school teacher perceptions of blended learning and the effect technology can have on their decision to adopt have a multitude of factors that manifest in negative or positive influencers. Under the phenomenological categories of usefulness and ease of use, I identified several recurring themes among the participants. In chapter 5, I will provide interpretations of the data in relation to the conceptual framework and the technology acceptance model, discuss the limitations of the study due to issues of trustworthiness, and provide recommendations for further research. I will also address the implications for positive social change and provide a conclusion statement.

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this phenomenological study was to explore the perceptions of high school teachers regarding their decision to implement blended learning pedagogy in their classroom. By conducting interviews and coding the data for themes, I gained insight into the perceptions of the individual teacher and how those perceptions were formed based on their personal knowledge and experience. The intention of the study was to provide teachers and administrators insight to possible influencers that can affect a teacher's decision to adopt blended learning pedagogy in his or her classroom.

My study found that the two factors postulated by Davis (1985) in his technology acceptance model of perceived usefulness and perceived ease of use had positive and negative themes indicating a teacher's propensity to adopt technology in a blended learning classroom. Positive usefulness theme codes, or those that would likely lead to adoption, were: accessibility, diversity, enabling, engaging, motivation, variety, and versatility. The codes associated with the theme of negative usefulness, or those likely to prevent adoption, were: distraction, feedback, frustration, Internet access, IT support, limitations, and technology reliability. The codes associated with the theme of positive ease of use were: accessibility, efficiency, and flexibility. The codes associated with the theme of negative ease of use were: challenges, experience, resources, and training.

Interpretation of Findings

In this study I examined the perceptions of high school teachers through a set of interview questions designed to elicit their responses to the themes of usefulness and ease of use of technology in regard to utilizing technology in a classroom with blended learning

pedagogy. The conceptual framework that informed this study was Davis' (1985) technology acceptance model, which was influence by Bandura's (1977) social cognitive theory. The findings reveal that there are positive influencers in each theme that do affect a teacher's decision to adopt blended learning pedagogy as well as negative influencers in each theme that affect the teacher's decision to not adopt. These findings are a confirmation of the conceptual framework developed by Bandura (1977), which explained how behavior results from internal and external influences. The findings also confirmed that the conceptual framework of the technology acceptance model, developed by Davis (1985), are correct in that acceptance of electronic technology resources into the pedagogy of a teacher, the decision to use or not use technology, are influenced by his or her accumulated perceptions of how useful the technology is and/or how easy will it be to use.

Research Question 1

The first research question I addressed was how does the perception of a high school teacher regarding the usefulness of technology affect his or her decision to implement blended learning pedagogy. The theme of usefulness was broken down further into the subthemes of positive and negative. The codes associated with the theme of positive usefulness were: accessibility, diversity, engaging, independence, motivation, variety, and versatility. The codes associated with the theme of negative usefulness were: distraction, feedback, frustration, Internet access, IT support, limitations, and technology reliability.

A high school teacher's positive view of the usefulness of technology had a direct correlation to his or her attitude toward adopting blended learning pedagogy. Virtually all

participants stated and acknowledged the importance of having electronic technology in the classroom. A teacher's perception was the focus of Qasem and Viswanathappa (2016), when they noted a propensity for him or her to pre-assess the usefulness of technology prior to making the decision to adopt. For example, Michael stated the variety of options available make technology more accessible to students and helped the students to be more engaged in learning. This was taken further by Kim when she stated that students today must know how to utilize technology and become "good practitioners" of this learning resource. What the attitudes of these participants revealed is that they view their classroom as student-centered and therefore the pedagogy they chose will be to the benefit of the students in their charge, and this pedagogy must include technology. This finding is supported by Ertmer (2015), when she argued that the value a teacher places on technology is directly proportional to whether or not his or her pedagogy choice is teacher-based or student-based. Porter et al. (2016) offered a different perspective by stating it is the nature of the relationship between the student and teacher and the amount of time a teacher has to prepare for the lesson that indicated the likelihood of blended learning adoption.

For the theme of positive usefulness, the code with the greatest frequency within participant comments was independence. I applied the independence code to participant comments that expressed how blended learning pedagogy was seen as empowering to students and gave them more autonomy in their learning. The teachers whose comments were included in this code were enthusiastic about how educational technology and blended learning pedagogy motivated their students to achieve higher levels of learning

and increased student's desire to take the topic further than the curriculum expectations. The results are supported by Vongkulluksn et al. (2018), who argued teacher perceptions of educational technology and the benefit to student achievement of learning goals will indicate the likelihood of pedagogy integration. In addition, Qasem and Viswanathappa (2016) concluded that pedagogy integration of technology is more likely when the teacher recognizes the usefulness of the technology

Another code that the participant's comments elicited was diversity. For this study, I coded participant interview responses for diversity when references were made as to how blended learning pedagogy supported different student learning styles or modalities. Jack and Richard both referred to the differing styles of learning that students possess and whether they are visual, auditory, or kinesthetic learners, educational technology with a blended learning pedagogy affords the opportunity for learning. I stated the importance of learning styles in the Chapter 2 discussion of implementation challenges within the present study when Oliver and Stallings (2014) pointed out that one of at least three areas of consideration was the students and their differing learning abilities/modalities.

Negative views of the teacher on the usefulness of educational technology were influential on the decision to adopt blended learning pedagogy as well. Although there were fewer comments and resulting codes for negative usefulness, they nonetheless affected the teacher's attitude resulting in probable decisions to not incorporate blended learning pedagogy in his or her classroom. Bandura's conceptual framework of behavior that postulates that self-efficacy, or the judgment of the individual as to whether they can

perform a task, will directly influence the decision to attempt to perform the task. For example, Mary stated that technology is “never my friend” and that she found it to be “a big waste of time.” Mary was less likely to utilize educational technology, and by extension blended learning pedagogy.

Although the codes of Internet access, IT support, and technology reliability were significant factors in the participants’ negative perception of usefulness of blended learning pedagogy, the code with the highest degree of comments was frustration. Even though the other negative usefulness codes listed here can lead to frustration, it was the independent comments about episodes of frustration and how they influenced the perceptions of the teachers that prompted the creation of a separate code. Nikolopoulou and Gialamas (2016) argued that one of the barriers to adoption exists if teacher perceptions or beliefs include a negative attitude toward technology. An example in this study was Kathy’s frustration with the difficulty in keeping a large number of students focused on a task when they had individual electronic devices to access the curriculum and could also access other Internet sources, e.g., social media platforms. This situation was perceived as not useful because the distracted students are not learning and Kathy was spending her time policing, not teaching. For Susan, the frustration was the amount of time required to reboot an electronic device or connect an alternative device if a malfunction occurred. Susan saw this lost instructional time as negative usefulness of educational technology and resulted in her negative perception toward blended learning pedagogy under these circumstances. Brown (2016) contradicts this finding by stating it is

higher anxiety levels from lack of experience that was the major cause of lack of teacher willingness to adopt blended learning pedagogy.

Research Question 2

The second question I addressed was how does the perception of a high school teacher regarding the ease of use of technology affect his or her decision to implement blended learning pedagogy. The theme of ease of use was further broken down into subthemes of positive or negative. The codes associated with the theme of positive ease of use were: accessibility, efficiency, and flexibility. The codes associated with the theme of negative ease of use were: challenges, experience, resources, and training.

Like positive usefulness, a teacher's positive perception of the ease of use of educational technology is likely to lead to adoption of blended learning pedagogy. Ease of use had a more practical meaning, in that consideration was given to the level of difficulty the teacher perceived in operating the technology or delivering the technology-based content. Stödberg and Håkansson Lindqvist (2017) stated that ease of use was a major contributing factor in the teacher's decision to implement technology into the classroom. When it came to ease of use, Jane described how having web-based curriculum gave her and her students the ability to access the curriculum from multiple resources and in a multitude of locations.

Positive ease of use was expressed by David as he explained how being able to adjust his teaching style on the fly and either provide direct instruction or allow the students to have an independent study activity. This flexibility influenced his perception

so that he would adopt blended learning pedagogy because it made the implementation of learning resources easier. For Michael, ease of use came in the form of textbook access where he perceived the digital textbook as easier than the hard copy version. These results are supported by Scherer et al. (2015), when they stated that the intentionality of use by the teacher of educational technology had a direct correlation to his or her perception of the ease to which the technology could be employed.

Negative comments were the majority under the ease of use theme. Challenges surrounded the teacher and student's ability to access technology. Zehra and Bilwani (2016) stated that lack of educational technology was one of the most dominant external barriers to technology integration. In the current study, Susan stated that even if she had taken great pains to prepare a lesson ahead of time, there was a high likelihood that the equipment would malfunction when attempting to teach the lesson in front of the students. When using the term resources, the participants were referring to the number of computers available to students. The higher the ratio of students to computer, the more negative the teacher's perception of blended learning pedagogy, and the less likely he or she would be willing to adopt. Kathy and Kim stated that the lack of consistent access to the devices that students need to utilize blended learning curriculum make it difficult and ineffective. The lack of institutional support indicated by Kathy and Kim are indicative of what Tondeur et al. (2017) explained as important to electronic classroom technology integration. Contrary to the argument of technology devices being the focus of institutional support, Claro et al. (2017) argued that it is the administrator's acumen in regard to classroom technology

pedagogy that can manifest into a robust classroom technology program lead by teachers with a positive perception of their institution's policies and support.

I assigned the code training most often to the negative ease of use theme and professional development opportunities dominated the discussion. In my study, participants' comments frequently included statements indicating a desire to have more training opportunities for teachers in how to utilize technology and implement blended learning curriculum. The study is supported by Guerra et al. (2017) and Stödberg and Håkansson Lindqvist (2017) who stated that a common obstacle to teachers implementing educational technology is a lack of courses on its use. In addition, Brown (2016) stated that professional development that included a hands-on experience with online technology significantly improved the reported likelihood of a teacher's intent to implement. Michael stated that his colleagues frequently wanted more training and were frustrated at being asked to utilize technology without proper training. Often, training consisted of a superficial introduction to the curriculum at a staff meeting with no follow up opportunity to gain a deeper understanding of how to utilize it. This made the curriculum difficult to use and caused teachers to avoid implementation in their classroom. Mary and Michael stated their confusion with newly implemented curriculum and their frustration at not receiving training that would have made their perception a more positive one. Kellerer et al. (2014) argued that although professional development can influence a teacher's perception of the usefulness of blended learning pedagogy, it was internal barriers such as the belief of the effectiveness of the technology and its benefits toward learning that was responsible for the decision to adopt, or not adopt, the pedagogy.

Limitations of the Study

I framed this study at a high school level with multiple grade levels and multiple disciplines represented. The participants in this study were split between male and female almost evenly, with six and five, respectively. The relatively small geographic area provided limited transferability of the findings to other regions. The student population of the schools that participated are primarily in a low socioeconomic status. Demographic differences in other regions of the country, and internationally, also limit transferability.

Recommendations

In the current study, I sought to understand the factors that influence a teacher's decision to implement blended learning pedagogy in his or her classroom. Greene and Hale (2017) reported that an estimated 9,000,000 K–12 students in the United States have participated in some form of blended learning and approximately 75 schools are operating with fully blended learning classes. Kellerer et al. (2014) stated that blended learning at the K–12 level is an area in education that is growing rapidly. Because of the quick growth, blended learning implementation has outpaced the research of factors that effect faculty implementation for this emerging pedagogy (Porter et al., 2016). According to Brown (2016), less than 5% of research into blended learning relates to the teacher's pedagogy. Brown argued that increasing understanding of a teacher's decision to incorporate blended learning into his or her pedagogy would benefit the areas of teacher training and student learning. A high school teacher's perception of the usefulness and ease of use of blended learning pedagogy affects his or her decision to incorporate blended learning and the associated electronic technology.

Archambault et al. (2016) stated that teachers' prejudices might exist that limited their willingness to add blended learning pedagogy to their methods. With a lack of understanding as to the extent that the teachers' preconceived notions influence their decision to accept blended learning pedagogy, school administrative personnel lack the tools they need to make informed decisions on blended learning implementation (Twembeke & Goeman, 2018). Administrators should take in to account the perceived usefulness of blended learning and the associated technology of their teaching staff when planning and scheduling professional development training. This will ensure the training addresses the negative perception influences of the staff and a higher likelihood of curriculum adoption in the classroom.

Cheok et al. (2017) explained that the technology acceptance model as developed by Davis et al. (1989) is a theory by which to explain or predict whether a technology user, based on his or her perceptions of the value of system in regard to its capabilities, is likely to utilize the system. Cheok et al. (2017) stated that teachers are self-determining when it comes to the technology they choose to include in their pedagogy, regardless of the intent of administration, because of the autonomy innate to their classroom environments. It is the teacher's perception that drives the outcome, therefore the perceived ease of use of the system is a direct predictor of perceived usefulness, and in turn becomes the decision point for inclusion in classroom instruction by the teacher.

The results of this study confirmed that the perceptions of teachers are influenced by external and internal sources and affect their willingness to adopt blended learning pedagogy. The perceived usefulness of blended learning pedagogy was affected positively

by the ability of students to access curriculum, the diversity of student learning styles that could be met, and by enabling students to feel empowered. In addition, a rise in student engagement and motivation and having a variety of curriculum options led to positive teacher perceptions. Usefulness perception was affected negatively when technology was seen as a distraction to students, when teachers experience frustration at not having enough technology for their students or it malfunctions excessively, and limitations such as the lack of verbal communication that is needed for foreign language courses. Positive ease of use perception was supported by the point of view that technology allows efficiency and flexibility in the classroom. Negative ease of use perception was mostly due to lack of experience and training with the educational technology or limited access to resources, i.e., computer lab and IT personnel.

Recommendations for further study include expansion to other regions of the country to establish continuity of the findings or identify significant regional differences that may exist. Discipline specific studies, e.g., mathematics, history, etc., would identify potential anomalies between them or trends that are common. A study with a mixed-methods approach could be utilized to correlate student performance data with teacher perceptions of blended learning or with a measurement tool to quantify the type and amount of training a teacher has received and the relationship of teacher training to perceptions of classroom educational technology.

Implications

This study contributes to filling the identified gap by providing information about how high school teachers' perceptions of blended learning can affect the decision to

implement the pedagogy. Since the study setting included public high schools, the social change implications potentially include public education sectors across the country. By identifying the influences of perceptions on pedagogy use, teachers can use this information to inform their decisions on approaches to positively impact the perceptions, thereby increasing the likelihood of their decision to implement blended learning.

This study provides knowledge of influences on teacher perceptions of blended learning and how those influences can affect his or her decisions to implement the pedagogy. Scherer et al. (2015) argued that a teacher's perception of technology usefulness is *the* best indication of his or her intention to use technology in the classroom for instruction. Administrators and superintendents moving to advance blended learning pedagogy can use this information to ensure classroom implementation success by emphasizing the usefulness of blended learning in student achievement gains.

Conclusions

A deeper understanding of the perceptions of a high school teacher and how those perceptions influence technology adoption in the blended learning classroom benefits all high school education stakeholders. This study provides information that is useful for administrators to create an atmosphere that will enhance teacher perceptions of educational technology. Training opportunities in the form of professional development geared specifically at the resources associated with blended learning lead to a higher degree of reported blended learning adoption by study participants. The study also illustrates the importance of technology support, both in the form of hardware and software purchasing from administrators and IT support.

Teachers gain useful information from this study by understanding the conditions that can affect their perceptions and in turn their likelihood to adopt blended learning pedagogy. Previous experiences with electronic technology drive perception of usefulness and ease of use and influence adoption decisions, a teacher's awareness of this connection can help him or her be introspective and determine if attitude adjustment is warranted or if the perception is justified. The student-centered scenarios discussed in this study that influenced the participant's perceptions inform teachers of the many observations and interactions that have significance as well. For example, student satisfaction, ability to access educational technology, and realized learning potential are some of the day-to-day considerations teachers use to form their opinions about whether adopting blended learning pedagogy makes sense.

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Appendix A: Letter of Invitation to Schools

[school address]

Date

Dear [Superintendent's/Principal's name],

I am a doctoral candidate enrolled at Walden University and I am researching how the perceptions of a teacher towards blended learning pedagogy influences his or her decision to implement it in the classroom. I am requesting permission to contact schools in your district that have high school teachers that have experience with blended learning pedagogy so that I may conduct interviews with them. The interviews will be conducted on the phone and recorded and should last approximately one hour. Interviews will be conducted outside of the normal work hours of the participants.

Thank you for your consideration. If you have any questions concerning this request, I can be reached by phone at XXX-XXX-XXXX or email at stephen.raymond@XXXXXX.XXX.

Sincerely,

Stephen Raymond

Appendix B: Invitation Email to Teachers

[Teacher's Name]
[School Address]

Date

Hello (insert name),

I am in a Walden University PhD program. As part of my study, I am conducting qualitative research interviews. I am seeking teachers with blended learning experience (blended learning is defined for the purposes of this study as curriculum provided online and the classroom teacher facilitates) that could participate as interviewees for my study. If you meet this criteria, would you be interested in assisting?

This will include completing an Informed Consent statement (I'll e-mail this to you); and allowing me to interview you by phone and record the interview. The whole process should take no more than an hour of your time.

Please let me know if you would like to participate.

You can contact me by phone XXX-XXX-XXXX or e-mail stephen.raymond@XXXXXX.XXX if you have any questions.

Thank you,

Stephen Raymond

Appendix C: Interview Question Mapping Matrix

Figure C1

Mapping of Interview Questions to Research Questions

Research Question 1: How does the perception of a high school teacher regarding the usefulness of technology of affect his or her decision to implement blended learning pedagogy?
Describe your beliefs about effective ways of teaching using technology.
How do you incorporate online technology into your students learning?
Describe how your teaching experiences have affected how you feel about using technology to teach students in your classroom.
How do you use the blended learning approach in your teaching practice?
Research Question 2: How does the perception of a high school teacher regarding the ease of use of technology affect his or her decision to implement blended learning pedagogy?
How does blended learning assist in your teaching and student's learning?
How has professional development training assisted you to incorporate technology into your teaching?
What technology tools do you or your students use to support blended learning? Please share an example of a tool that you chose not to use because it was perceived as difficult to use and describe the relationship to blended learning.